

A
MEDICINAL and EXPERIMENTAL
HISTORY AND ANALYSIS
OF THE
HANLYS-SPA
SALINE, PURGING, AND
CHALYBEATE WATERS,
NEAR SHREWSBURY.
WITH NEW
DISCOVERIES
FROM
PRACTICAL KNOWLEDGE, and CRITICAL
REMARKS, on the Efficacy of these, and the
same kind of
MINERAL WATERS.

By DIEDERICK WESSEL LINDEN, M. D.

Τὸ κατὰ πολὺ, καὶ ἱξαίνης, κενῶν, ἢ πληρῶν, ἢ θερμαί-
νείν, ἢ χύχειν, ἢ ἄλλως ὀκοσῶν, τὸ σῶμα κινεῖν, σφα-
λερόν.
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CHALYBEATE WATER
SHEPHERD

DISCOVERIES WITH NEW

Practical Knowledge, and Critical Remarks, on the Theory of them, and the true kind of



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TO
THOMAS POWYS, Esq;
O F
BERWICK,
IN THE
COUNTY OF SALOP.

S I R,

THE salubrious Properties of Medicinal-mineral-water Fountains (when judiciously administered) have long been found to be of the greatest service to the human body, in many disorders; particularly, in most chronic ones; their use therefore, and by consequence, their estimation, have proportionally increased.

BUT, within the compass of the last fifteen years, the most celebrated Medical-fountains, in *France* and *Germany*, have been, by many eminent *Physicians*, re-examined, and several additional virtues discovered in them; an account of which has been generously communicated to the Public, for the benefit of all that stand in need of them.

THE same also has been practised in *Great - Britain*, which abounds in Health-promoting Waters, of every kind, with the like accuracy, benevolent disposition, and success.

THE illustrious Owners of the foreign territories and districts, whence the Mineral-waters issue, have gained immortal honour, by making proper conveniences for the reception of those, who

DEDICATION. iii

who come for relief, to those medicinal Streams.

As you, good Sir, act upon the same beneficent principle, with the excellent Mineral-waters, whose salubrity is faithfully related in this Treatise, and are your Property,—I look upon it as my indispensable duty, to inscribe to you the register of their Merit; as by your munificence, this best of Charities is promoted, and made of publick utility.

HERE, Sir, I have a spacious field before me to record the extent of your *Philanthropy* on every other occasion, but, dare not utter the sentiments of my heart, for fear of offending you. I shall therefore at present take my leave, with sincerely praying, with the many thousands, who, I trust in *God*, will

iv DEDICATION.

be benefited by this Bounty of yours,
that the *Almighty* will reward you with
temporal and eternal Felicity.

I am,

with the greatest

esteem and respect,

S I R,

Your most humble,

and obliged Servant,

SHREWSBURY,
March 19, 1768.

D. W. LINDEN.

THE

P R E F A C E.

IT is a very great rarity to find Mineral-water Springs in a naturally pleasant situation. It being not only so here in *England*, but all the world over. They are in general, placed by the *Almighty Creator*, in narrow, deep vallies, surrounded with steep rocks, and bogs; and all that is rural about them, owe their origin to art. It is not so with the *Hanlys-Spa*, the subject of the following Treatise. Because, whoever visits this Mineral-water Spring, will find, that I have not exaggerated its healthful, and pleasant situation. And such as will be pleased to repeat the experiments, will be convinced of the salutary contents, and that my Narrative thereof is within the limits of the greatest moderation, and veracity.

In the mean time I cannot help confessing, that my hopes of these Waters are very sanguine,

guine, and that they will be much frequented, when more universally known; so that it will be found necessary to erect Baths; and whenever this event happens, I doubt not, but that bathing advisedly therein, will prove of much greater efficacy, or medical service, than the most famed *Thermæ*, or natural, Hot-waters of this Kingdom are able to do. Because the salts of these waters are of a very fine texture, and may be prepared to suit any constitution, in such a manner, that they may be conveyed into the circulatory fluids, by this outward application; and be made warm, either with copper, lead, or iron-slugs; or any other matter, that possesses a more volatile sulphur, to act in conjunction with these Salts.

I HAVE nothing farther to observe here, than that I hope I offend no body, with my Reflection on the *Medicasters*; and from my aversion to a too plentiful use of the Medical Powers. I hope not to be deemed an Infidel, that believes nothing of *Hippocrates's* Creed; all that I contend for, is, that a proper use thereof may be made, and all abuses avoided. I doubt not, but all
confi-

considerate Readers will agree in this point with me, that a great Reformation is wanted in the Medical Profession. But, this is a task of too great a consequence, for me to meddle with, because the things of this World, are so circumstanced, that great Connexions, Interest, or Power, will at all times screen the Defects, and encourage the Ignorance of the most superficial, and worthless Practitioners, in every Science.

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Medicinal and Experimental
HISTORY

HANLEYS-SPA MINERAL WATERS

CHAP. I.

*The Situation of the Hanleys-Spa Mineral-
Waters, with a short Subterranean, and
Geographical Account of the same, and in
what Manner discovered.*

THE Saline, Purging, and
Chalybeate Mineral-waters of
the Spa, at the Hanleys, (the
subject of this Treatise) are
situated in the parish of *Meole
Brace*, and township of *Pulley*, distant two
miles and a half, south-west by west, from
Shrewsbury. *Meole Brace* was a town of

great antiquity, and said to be called so from *Brochwall Ysthera*, one of the greatest Princes of *Pengwern-Powis*, whose palace stood upon that spot of ground where now the church of *St. Chad* is erected, in *Shrewsbury*, and his country-seat was at *Meole*.

THE whole parish is as fertile and pleasant, as any in the county of *Salop*, and is bounded by two turnpike roads, one leading to *Ludlow*, the other to *Longdon*, and is intirely within the liberties of the town of *Shrewsbury*.

FROM the Spa there is also another turnpike, branching out to the *Lane-bill*, celebrated for its fine air and situation, being a green turf, backed by *Mr. Powys's* wood, and its circular front facing a great part of the country; from whence may be seen above fourteen parks, a place long resorted to for exercise and airing, by the gentry of *Shrewsbury*.

SHREWSBURY is a most suitable place for the entertainment of such as visit these Mineral-waters;

ral waters; and the ride once or twice a day from *Shrewsbury* to these Waters, either on horse-back, or in wheel-carriages, will greatly contribute to the restoration of health, particularly to the cure of such chronical diseases, as have their origin from obstructions.

THE town of *Shrewsbury* is of great splendor and antiquity, much esteemed for its beautiful situation, healthfulness of air, and the most delightful advantage of the river *Severn*. A great number of gentlemen's families constantly reside in this town, who are most politely civil and courteous to strangers. The tradesmen are remarkable for their integrity and honesty in their dealings; and all manner of provisions are most excellent in their kinds.

It may be justly said, as a certain author expresses it *, "*Shrewsbury* is indeed a large, pleasant, populous and rich town; the *Severn* surrounds it, just as the *Thames* does the *Isle of Dogs*, so that it makes the form of a horse-shoe; over which there

* Travels through England.

" are two stone-bridges, upon one of which
 " is built a very noble gate, and over the
 " arch of the gate the statue of the great
 " *Llewellyn*, the idol of the Welch, and
 " their last national prince. This is really
 " a town of mirth and politeness; something
 " like *Bury* in *Suffolk*, and *Durham* in the
 " *North*; but much larger than either of
 " them, or indeed than both together."

THERE are a very great variety of most
 delightful walks in the fields and meadows
 round about *Shrewsbury*, in a pure, health-
 ful air, embellished with several romantic
 entertaining prospects. The *Quarry* (the
 public walk near the town) is superior to
St. James's Park, from the most delightful
 advantage this place receives from the river
Severn.

IT would take me too much out of my
 way, to record the ancient state of *Shrews-*
bury, and the many religious houses of all
 kinds once established in this town; the
 remains of many are yet extant. But I
 cannot forbear mentioning the *Castle*, which,
 though

Hanlys-Spa Mineral Waters

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though built in *William the Conqueror's* time, by *Sir Roger de Montgomery*, is yet intire and in good repair. It is now inhabited by a gentleman and his family, who keep it and the gardens in the neatest order: its *Mount*, which every stranger is permitted to see, is their admiration, as it affords a most delightful and extensive prospect.

THE *Free Schools* are a beautiful and grand structure, founded by *King Edward the Sixth*, but greatly improved by the royal bounty of *Queen Elizabeth*. Many *Great Men*, particularly the famous *Sir Philip Sidney*, had their education there. They take in scholars not only from this town and country, but from any other, even the most distant places, and are at present in very great repute. *Shrewsbury* is of late years prodigiously improved, and daily improving, in good houses and delightful gardens, for the reception and convenience of the neighbouring and distant gentry, who are continually resorting to it.

I will just mention two or three modern structures, which are not only vastly ornamental, but real and universal benefits.

A PAIA hospital in *Frankwell*, one of the suburbs of this town, erected, and plentifully endowed, for the reception and maintenance of several decayed house-keepers; and the cloathing and teaching a number of poor children, at the expence of *Mr. Milington*, a native of *Sbrensbury*.

THE *Salop Infirmary*, supported by voluntary Subscriptions and Benefactions, is a fine edifice, stands on an healthy, airy and pleasant spot, and is fitted up in the most commodious manner, for the ease and advantage of the patients. The Trustees are truly commendable for their regular visits and attention, that the charitable design of the contributors may not be frustrated; as are the *Gentlemen of the Faculty*, who attend it, for their unanimity to serve, and humanely treat the poor and distressed persons under their care.

THERE

Hanbury Spa Mineral Waters.

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THERE is also an elegant hospital for *Orphan Children*, a branch of the *London* one, lately finished. It is delightfully situated on a beautiful eminence, from whence you have a fine view of the river *Severn*, the *Quarry*, (from which only the river divides it) *Shrewsbury*, and the adjoining country.

I SHALL close these *Anecdotes* by observing, that the *Stone Bridge*, over which all travellers, goods, and carriages, to and from *London* pass, being too narrow, decayed, and consequently extremely dangerous; a most *Patriotic* scheme was proposed by *Sir John Ashley, Baronet*, one of the representatives for this county, to remedy these great inconveniences; and which he began by a noble subscription of 1000 pounds. This was very generously seconded by many public-spirited *Noblemen* and *Gentlemen*. The old *Bridge* is now taking down, and a new one, much enlarged and improved, will, with all possible expedition, supply its place.

THE writers on Mineral-waters in general agree, that, if these natural medicines are used with proper exercise, both in riding and walking, so as to cause a motion throughout the whole body, that then they are not only more efficacious, but also more speedy in the operation. The truth of this assertion cannot be doubted, and therefore, such places as the neighbourhood of *Sbrensfury* is, are the most desirable for these medicinal fountains. Valetudinarians are, as it were, enticed by the agreeableness of the most pleasing situation, to a salutary and necessary exercise.

THE places, in which Medicinal Mineral-waters are found, have, all the world over, a very great affinity to each other; because a mixture of many Minerals are required for the production of these Waters, a circumstance which never alters, and of which the truth is established, from the many investigations that have been made within the zone or circuit of these kind of springs, by the *Curiosi* of all *Europe*. This experience, confirmed by natural regularity, attests, and is in all,
and

Hanlys-Spa Mineral Waters.

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and every respect, agreeable to the soil in which the *Hanleys-Spa* springs are. The coal-mines, which are worked at the *Hanleys*, in strata of the same nature with those of Medicinal Springs, give us a perfect insight from whence these Waters receive their virtues.

THE two Medicinal Springs we are treating of, are situated in a valley between two eminences, both which are stored with a variety of Minerals, the strata are horizontal; and from the petrefied vegetables, that are found in a soft stony substance, at several yards depth, evidently prove, that there has been an alteration in these mineral repositories since the creation.

THE coal-mines at the *Hanleys*, and the searching for sand and lime-stone, lead us to the very Minerals from whence these Medicinal waters receive their virtue. The coals which are obtained here are of a two-fold nature; the one contains more than a common share of sulphur and vitriolic acids, in so much, that it is perceivable by a suffocating

fuffocating smell in the burning; and under these coals is a Mineral Mixture, such as mundic *, salt, slate, iron-stone, and bituminous earth. The other coal is of a more bituminous kind: and near, or under this coal, is not that variety of Minerals as in the former, but abounds more in iron-stone, and a soft stony substance, with impressions of petrified or preserved vegetables.

THE Minerals that are obtained with the first mentioned coals, are ranged in a confused irregular manner, from which damps or vapours arise, that are able to convey the finest Mineral parts, to impregnate water with medical virtues. This coal-work is to the south of our Mineral Springs, and the other coal-work to the north of them.

To the west of these medical fountains is a bed of lime-stone, intermixed with salt,

* Some very curious mundyc is found amongst this bed of Minerals, which will bear a polish equal to that of Spain.

slate,

Hanley's Spa Mineral Waters. 21

stone, and iron-stone; and to the east, at about seven or eight yards depth, is a bed of sand; the intermediate space from the surface to the coal, and other Minerals, is a blue, and, in some places, a reddish clay, and this clay is not without vitriolic lumps, or clusters of marcasites.

THUS, from indisputable facts it appears, that the *Hanley's Spa* Mineral-waters have their natural requisites, and are surrounded with Mineral repositories, for their constant support.

THE *Hanley's Spa* Mineral-waters, particularly the saline, purging Water, springs up with a more than common motion, or rather with an impetuosity, which, in general, is not the case with other, or common water springs. This violent elastic power is also incident to the medicinal water-fountains in general, both hot and cold, all the world over; and, therefore, Dr. Sæp very justly observes, that this circumstance has not been properly taken notice of by preceding Mineral-water writers. Dr. Sæp supposes, that,

that, as the Mineral-water Springs are found in valleys; and surrounded with hills or mountains, and as these eminences contained large subterranean reservoirs of these kind of Waters, from thence he supposes the current to fall downwards, and, in the fall, to receive so much elasticity, as to spring forth with that force we find they do, somewhat like an artificial Water-work.

THIS hypothesis is ingenious enough, and may in some few particular instances hold good, but, when we draw the picture from the original, it can in general not stand the test, because the real case seems to be this. Metallic Ores and Minerals, in their native beds, are never found without great plenty of water, and, for the preservation of the whole system, these waters are in a constant, and more than common motion, so that, by the least vent of air in their under-ground passages, particularly in the saline water-veins, they break forth with very great violence; in so much, that they resist iron mining-instruments, wherewith the vent hole is caused; to which undoubtedly the Mineral
damps,

damps, that convey the medical contents to the Water, greatly contribute.

THE first discovery of the *Hanlys-Spa* is twenty-six years ago, on or about 1741, which happened in the following manner: *Mr. Francis Boothby*, a master-collier who worked the coal-mines at the *Hanlys* in *Mr. Powys's* lands, endeavoured to discover new beds of coal by boring; and, by this means, he happened, at fourteen yards depth, to bore into the subterranean current of this Water, which, as soon as he broke into, the Water immediately issued forth with great impetuosity; in so much, that it lifted up the noggers, or boring instruments; and the Water continued to stream forth in such abundance, that he could not, in this place, search any more for coal.

THE saline taste of this Water induced *Francis Boothby* to use or try the same, as a natural medicine; what other motive he had for this experiment, I could not learn; however, the first patient on whom it has tried, which was about three months after

after the discovery, was one *Mary Grafton*, eight years of age, step-daughter to a collier, that worked under *Mr. Francis Boothby*. This *Mary Grafton* was afflicted with most violent stools, all her body over, her belly swollen to a very great degree, and was deemed incurable at the time when these Waters were advised for her relief. She did drink these Waters, and also bathed in them, for which purpose, they were made warm; by which means, she discharged a very great quantity of worms. The sores healed, and a perfect cure was the happy consequence, and I am told, this woman, whilst I am writing this, is still alive, and the mother of many children.

The happy effect these Waters had on the very first patient, brought them immediately into great esteem with the commonalty; and, as they performed many cures in process of time (tho' by an irregular use) their reputation increased, and have, ever since their discovery, been much frequented; and from the many cures that have been performed by them (an account of some few is collected

tested from undoubted authority) which shall be recorded in their proper places, are still deservedly in great repute.

T H E R E are several Chalybeate-water springs within the zone, or circumference of the Mineral mixture, which belongs to the *Hanleys-Spa* Saline-waters. This is not a new discovery, but is, from long experience, found to be a natural consequence; because it is the same every where else, all the known part of the globe over, that Saline-Springs are never without Chalybeate ones within a short space from them; and these Chalybeate-waters are never without salts; upon which account the Mineral contents are more minutely dissolved; and therefore are the best of that class of Waters that are called Chalybeates.

T H E R E are, however, Chalybeate-waters that have no saline springs near them: the renowned ones at *Tunbridge* in *Kent*, and several other famed Waters, are of this stamp; they are for ever destitute of salts, and therefore artificial ones must be added, which

which is a great and nauseous inconvenience to the drinkers.

I do not find that *Francis Boothby*, or any body else, took notice of the *Hanleys-Spa* Chalybeate springs; but they remained totally unregarded, until a gentleman, who had been a visitor at *Landrindod*, informed me of them, imagining these Waters to be of the same nature with the Rock-water at *Landrindod*. His notions were confirmed by my experiments; and from Chapter III. it will appear, that they are as excellent a Chalybeate-water of the kind as any in *Great Britain*; and therefore, I recommend them immediately to all drinkers of the Saline-waters * without distinction; and those springs

* Last summer this Water was very much resorted to by the common and poorer sort of people, who did drink them without the least order or regularity; and, being afraid they might prejudice themselves thereby, I cautioned them by the following advertisement.

SHREWSBURY, June 14, 1767.
WHEREAS the Purging MINERAL-WATER at the *Hanley's* in the Lands of *Thomas Powys, Esq;* commonly called

springs, that by the experiments, appeared most beneficial for drinking, I recommended to be properly secured, and to be made commodious for the drinkers; all which was very chearfully complied with, by the *most worthy Owner*.

called BOOTHBY'S SPA W, has been analized and found to be much stronger, than has generally been imagined, and as a new stone reservoir is placed near the spring, in such a manner as to prevent the influx of other water, and thereby to preserve its natural strength and unadulterated virtues. This is to caution all PERSONS against the too free use of it. It has been observed that many take too large a quantity, and continue drinking till it begins to operate: in which they do wrong, and may greatly prejudice their constitutions; I therefore take the liberty of recommending the following method:

Let those of the strongest habit of body not exceed four half pints, and not drink them too soon after each other, but allow a space of 15 minutes at least between each half pint, and conclude with one half pint of the Chalybeate Water.

Let such as are of a tender constitution and weaker habit, begin with two half pints, and never exceed three, observing the above method of drinking, and concluding with half a pint of Chalybeate Water.

These quantities, taken in this manner, will be found sufficiently powerful in the operation, particularly to those who shall continue the use of these Waters for several days together.

D. W. LINDEN.

C

CHAP.

C H A P. II.

*Experiments on the Hanleys Spa Mineral
Purging Waters.*

MEDICINAL Mineral Waters are not a modern discovery, they have been known in the most early age; because we find in the second book of *Kings*, chap. v. verse 12, that the waters of *Abana* and *Pharpar*, near *Damascus*, were, in the days of *Elisha* the *Prophet*, in very great repute, for their Medicinal virtues. *Pliny*, in his *Natural History*, and *Seneca* in *Quest. Nat.* inform us of many different species of Waters in *Italy*; but neither these, nor any other ancient authors, give us any instruction how to try, or to analyze them; because that seemed to be a task reserved for the present age, in which Chymical Philosophy so greatly flourishes.

THE necessity of analyzing Mineral waters, to be perfectly acquainted with their contents, in order to regulate them for the benefit of Medical Practice, is so well known, that it is needless to repeat them here; but,

as there are already several Waters, of the same class with those we are here treating of, resorted to in this kingdom; it is therefore incumbent on us, to be most minutely particular in the experiments before us, that the judicious Readers may be enabled to judge, if the *Hanleys-Spa* Waters are either superior in goodness, or have only an equal share of merit, with others, that are already known.

UNDER these circumstances, it is natural to suppose, that a peculiar care and exactness in the experiments ought to be observed. And here, I beg leave to inform my Readers, that they were made at several times, and each experiment more than once repeated; the days on which they were made, are *May* 18, 19 and 21; *June* 22 and 23; *July* 9 and 11; *August* 11 and 12; and *September* 16, 17, 18, 20 and 22, all in the year 1767. And I contrived, as much as possible, to make, and to repeat them, when the air was clear and dry. There was no alteration in any of them, before, or after the freestone reservoir was placed, except that they were stronger, or

contained a greater quantity of salt, and also much clearer, when the spring was properly secured from other Waters mixing with it; as will more circumstantially appear, by the following experiments.

1. IN the first Chapter we have given an account of the Minerals, through which this Water strains, and described the strata of clay, &c. through which it springs into the reservoir, for use.

2. THIS Water is perfectly clear, the taste is saline and bitter, but not disagreeable; does not change its colour, when exposed to the air, nor loses its purgative qualities.

3. FOUR half pints of this Water to be taken gradually, in the morning, upon an empty stomach, will be found a sufficient dose of purging physic, for the strongest habit of body: and in tender or weaker constitutions, from two to three half pints, will be sufficient for the same purpose.

4. THE volatile spirits have been collected from this Water in spelters, or zink ashes, and

and have been also obtained, after Dr. Seip's method; and in both experiments, are found to be of a most benign, bituminous nature.

5. WHEN this Water is taken up at the spring-head, into clean bottles, and well corked, it will bear exportation, and retain the purgative virtues.

6. SPIRIT of Salt causes no alteration in this water, except a small motion, without separating any of its contents, and lining the glass, in which they are mixed, with air-bubbles.

7. SPIRIT of Nitre causes with this Water a very small motion, but, on standing, causes no precipitate, or any other alteration.

8. AQUA Fortis causes no alteration, when mixed with this Water.

9. OIL of Vitriol causes instantaneously a violent heat in this Water.

10. WITH Spirit of Vitriol no motion or alteration is made, but it causes the glass, in which it is mixed, to be lined with air-bubbles.

11. A SOLUTION of Mercury Sublimate causes in this Water a whitish cast, which, on standing, precipitates of a colour inclining to an orange-yellow, the Water becomes clear again, and in a plentiful manner lines the sides of the glass with air bubbles.

12. WITH a solution of common Quick-silver, this Water causes a precipitate of an unpleasing yellow colour.

13. A SOLUTION of Roman Vitriol changes the blue to a greenish colour; causes a precipitate, and lines the glass with air bubbles.

14. A SOLUTION of Cream of Tartar causes no alteration, when mixed with these Waters.

15. A SOLUTION of white Vitriol causes a pearl colour, which, on standing, precipitates, and the Water becomes clear again.

16. IRON-VITRIOL dissolved and mixed with this Water causes, on standing, a precipitate.

precipitate, and leaves a cuticle of various colours on the surface of it.

17. A SOLUTION of Sacchar Saturni, causes a milky colour in this Water, which, on standing, precipitates, and causes a shining cuticle on the surface.

18. A SOLUTION of Alum causes no alteration, when mixed with this Water.

19. SYRUP of Violets changes this Water into a green colour.

20. FRESH pressed juice of blue Flowers did the same as syrup of violets, in the foregoing experiment.

21. SPIRIT of Hartshorn changes this Water into a milky colour, which, on standing, coagulates or breaks, and separates itself from the Water, as curds do from the whey; which precipitates in the same colour.

22. WITH Spirit of Sal Armoniac, the same as experiment 21.

23. A SOLUTION of the Crude Sal Armoniac

moniac made no manner of alteration in this Water.

24. OLEUM Tartari per deliquium affected this Water in the same manner as Spirit of Hartshorn.

25. A SOLUTION of Pearl Ashes caused in this Water a beautiful transparent white colour.

26. SALT of Wormwood dissolved, caused in this Water an opaque orange colour.

27. TINCTURE of Galls causes a muddy colour in this Water, with air-bubbles on the sides of the glass.

28. DECOCTION of Galls makes in this Water a muddy white colour.

29. POWDER of Galls causes no alteration in this Water.

30. GRANATE Flowers strike an agreeable red colour with this Water, and, on standing, form a shining cuticle on the surface of it.

31. POWDER of Granate Peels causes no alteration.

32. TINC-

32. Tincture of Cochineal, made with spirits, causes at first a fine colour, like claret, but, on standing, changes into a beautiful blue.

33. INFUSION of Cochineal, made with water, strikes a lasting claret colour in this Water.

34. AN Infusion of Campeachy Wood, made with water, strikes a blue violet colour with this Water.

35. IN a glass receiver were evaporated 25 ounces of this Water, and left 160 grains of sediment.

36. THE sediment, obtained in the last experiment, produced, on proper separation, 120 grains of small grained purging salts, of an opake snow-white colour, like those of *Sedlitx* in *Bohemia*.

37. OIL of Vitriol causes not any alteration or motion with this salt.

38. SYRUP of Violets does not change colour when mixed with this salt.

39. THIS

39. This salt, when thrown into an ignited crucible, melts as thin as water, but loses in weight.

40. THE sediment, with the salts and what was left, when the salts were separated from it, were each by itself sublimated with arsenic, the produce of which was a fine deep orange-coloured substance.

41. THE natural black precipitate, which settles in the reservoir, and in the current, which runs from this Water, was treated in the same manner as experiment 40, and produced a like orange-coloured sublimate.

42. THE salts of the *Hanleys-Spa* Purging Water, exposed in a damp place, will contract a moisture, but not lixiviate.

43. WHEN the salts of this our Mineral water are dissolved in warm water, and agitated, it will let fall, or precipitate, a fine white powder.

44. IF these salts are exposed in a dry air, they do not alter nor change in the least, nor contract or moulder into a white magnesia, like

like powder, as the *Chesterham, Epsom*, and other Purging Mineral-water Salts do.

45. A white and blue earthen mug, commonly called a half-pint, but not standard measure, having as much of the *Hanleys-Spa* Purging Water as it could contain, did weigh nine ounces and three drams. And the same quantity of our Chalybeate Water did weigh nine ounces, one dram, and 32 grains.

THESE are the experiments, which, out of the many I have made, from time to time, on the *Hanleys-Spa* Purging Waters, I thought necessary to lay before the Publick; and do not in the least doubt, but they will be deemed sufficient, both in number, and in the nature of their quality, by every candid, and inquisitive Reader.

I HAVE already in another place observed, that there is no necessity for a multiplicity of experiments to try, or essay Medicinal Mineral-water*, because a few well-chosen ones, that discover the contents, in the

* See our Treatise on the *Llangybi* Mineral-water in *Carnarvonshire*.

plainest manner, are preferable to such, as require philosophical and learned elucidations. Therefore I apprehend it will be wondered at, that I have been in a manner superfluous with experiments, on this Purg-
ing Mineral-water. But, as I have already mentioned, that there are several waters in this kingdom, which belong to the same class with these we are here treating of, all which have discourses wrote on them, and are overstocked with experiments; on which account I am obliged to publish at least so many, as to be on a footing with those that have gone before me, that every candid Reader may be enabled to compare them with each other, and by this means judge which of these natural Remedies deserve the preference.

Tho' *England* is, in a particular manner, blessed with saline purging waters, which do not so much abound in other parts of *Europe*; yet there never has, before this, an account of a saline Spring been offered to the Publick, that has been found of the same nature and quality with those of the *Sedlitz Waters*, in *Bohemia*, which were,
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by Dr. *Hoffman*, introduced into the Medical Practice ; whereon he bestows the highest encomiums, calls them the Noblest Waters of the kind, and prefers them above all the Purgative Medicines of the shop, in chronical cases. That the *Hanleys-Spa* Purging Mineral-water is of the same species and quality with the *Sedlitz* Water in *Bohemia*, and of consequence, the very first of this kind that has in *England* been exhibited to public knowledge, will more satisfactorily appear from the following natural conclusions, which are the result of the above related experiments.

1. THE soil, with the mixture of Minerals contained in them *, in which the *Hanleys-Spa* Purging Water springs, are of the same nature, as *Hoffman* and others describe those, in which the *Sedlitz* waters issue forth.

2. THIS our Purging Water does not differ either in appearance or taste with those of *Sedlitz*.

* The soil, with the Minerals, &c. is to be understood in things of this kind, of all that is found, from the surface, to at least 20 yards depth or more.

3. A SMALL quantity of this our Purging Water is sufficient for a dose, it is the same with the waters of *Sedlitz*; and here I beg leave to observe, that the most famed Mineral purging Waters here in *England*, require, from 55 to 60 ounces of water, at least for a moderate purgative dose, when, from 25 to 30 ounces of the *Hanleys-Spa* Water is a sufficient quantity for the strongest constitution.

4. THE Volatile Spirits of this Purging Water, we are treating of, are of that nature, that they assist the Water to operate, without griping, or giving any other uneasiness to the belly; this is also the same with the *Sedlitz* water.

5. The *Hanleys-Spa* Purging Mineral-water will bear exportation, as well as those of *Sedlitz*.

6. THE strong acids, such as oil of vitriol, spirit of nitre, spirit of salt, &c. cause not any motion, or ebullition, with the *Sedlitz* water, but it will turn green, with syrup of violets; all which is, in every

every respect, the same with this our Purging Water.

7. THE experiments from 11 to 14, instruct us, that this our Purging Water is not overstocked with, and that it contains but a small quantity of a vitriolic acid. Hence it is, that the salts are small-grained, and of the same nature with those of *Sedlitz*.

8. THAT our Purging Mineral-water contains a fine white dissolved earth, is evident from the 15th and 18th experiments; and also of those from 21 to 26. The waters of *Sedlitz* contain, in an equal degree, the same ingredient.

9. DR. *Hoffman*, in his trials, made use of powdered galls, and found they had no effect upon the *Sedlitz* waters, and therefore pronounced them destitute of all iron-contents; but in succession of time it was discovered *, that tinctures, decoctions, and infusions made of galls, have an effect upon

* Those that have wrote on the *Sedlitz* waters, are Dr. *Hoffman*, physician to the late King of *Prussia*, Dr. *Garelli*, physician to the Emperor *Charles VI*, Dr. *Zittman*, Dr. *Schwencken*, and Dr. *Goeritz*.

the *Sedlitz* waters, and that they contain a very small quantity of iron-earth. That our *Hanleys-Spa* Purging Water is exactly in every respect the same, is incontestably proved by the experiments 27 to 31.

10. A VERY small quantity of iron, in our Mineral Purging Water, manifestly appears in the experiments 32, 33 and 34, because a very small portion of dissolved iron, is required to change cochineal and campeachy, into a beautiful transparent blue; but, if the solution of iron, in the least, is over-dosed in quantity, then a disagreeable, opake, blue colour, will ensue. These dyes have the same effect upon the *Sedlitz* water.

11. EXPERIMENTS 35 to 39, inform us, that the salts, when extracted from our Purging Mineral-water, are of the same nature and species, as the salts obtained from the *Sedlitz* waters.

12. THAT there is a small quantity of sulphur in this *Hanleys-Spa* Mineral-water is evident from experiments 40 and 41. I have not the least doubt, but that it is the same
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with the waters of *Sedlitz*. For which suggestion, I have no authority, because, amongst the many Experiments on this Water, related by several authors, I cannot meet with one, that has the least tendency, for the discovery of sulphur.

13. FROM the 42d Experiment we learn, that this our Mineral Purging Water, does not contain an alkaline salt, but an earth, of this nature; on which, the acid damps or exhalations have no power to act, which again is verified by Experiment 43, where a natural magnesia is produced from the salts; all this is exactly of the same nature, with the salt of *Sedlitz*; because Dr. *Zittman*, from experiments, demonstrates, that the salts of that water have a *Terra cretacea*, for their fundamental texture.

14. THE salts of such Mineral Waters, which are already here in *England*, in repute, will moulder into a white powder, when exposed to the air. This natural, or airy pulverisation, is caused from the alom, which is inseparably mixed with these kinds of salts. Hence it is, that waters of this

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fort, do not so universally agree with all constitutions, as the waters of *Sedlitz* in general do, because, it is well known, that alum is of a rough, binding nature, and a most unfit ingredient, in a cathartic medicine; however, this is not the case with the Hanlys-Spa Purging, Mineral Water, because the 44th Experiment, undoubtedly proves, that it is happily destitute of alum, and such kinds of contents, and therefore is, in every respect, by the most natural ties, related to the waters of *Sedlitz*.

15. LASTLY, I beg leave to observe, that the *Sedlitz* water was the first, and I believe, still the only one of this kind, that is discovered in *Germany*; it is also of a late date, that it was brought into medical use, and *Dr. Schwencke* very justly observes, that when luxury became the cause of many stubborn, and opprobrious diseases, a most noble natural remedy against them was found in these excellent, saline Waters; *Dr. Zittman*, with very great success in many obstinate diseases, joined the use of the *Sedlitz* water to the *Thermæ*, or naturally, hot waters, by recommending the sick, or afflicted,

afflicted, to go first to *Sedlitz*, and after some time using that water, then to repair to the naturally, hot fountain, for the same purpose. I am persuaded were the same brought into practice here, and in some cases, the body prepared, for the Bath Waters, by our Saline, Mineral Water, very great benefit would be received thereby.

C H A P. III.

Experiments on the Hanlys-Spa Chalybeate Water.

THE great variety of Chalybeate Waters, and the great utility they are of, in the Medical Practice, are so well known, that it would be highly absurd to repeat them here. This is also the same case with respect to the Experiments, because they are equally well known, and as this Chalybeate Water, we are here treating of, is of a similar, and very near nature, with two capital Chalybeate Waters, in this kingdom, it might therefore seem sufficient to say, that by the Experiments I have made on this Water, they are, as near as possibly can be expected,

expected, of the same nature with the Chalybeate waters, at *Scarborough*, and those of the Rock, at *Llandrindod*; and refer to the experiments, published by Dr. *Shaw* on the *Scarborough*, and those by me on the *Llandrindod* Waters. But, as these books cannot be in every reader's possession, I thought it therefore proper to repeat them here.

I HAVE already observed, that the Hanlys-Spa Chalybeate Waters, are as near as possibly can be expected of the same nature, with those of *Scarborough* and *Llandrindod*; but, as there never, as yet, have been found two Chalybeate-waters exactly the same, in every respect; tho' they agree in general points, so, we cannot suppose an exact similitude in these three Chalybeate-waters; but, we must expect, that some have more or less of this, or that ingredient; because, nature does not in her compounds make use of measure, and weights, as is the case in the laboratory; and therefore, it is necessary to shew, before we enter upon the Experiments, what difference there is, betwixt these three Chalybeate-waters, which belong to one, and the same class.

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THESE differences are in some respect material, and are the following. 1. The Hanlys-Spa Chalybeate Water, is much clearer than *Scarborough* and *Llandrindod* waters. 2. The Hanlys-Spa Chalybeate Waters have a much more penetrating, volatile, and pleasant smell, than those of *Scarborough* and *Llandrindod*. 3. They also have more mineral spirits, salt, and chalybeate contents, than these two last mentioned. 4. There is no alum in the Hanlys-Spa Chalybeate Water, but is an ingredient in those of *Scarborough*. 5. The Chalybeate, we are here treating of, never varies, but is in all seasons, and in all weathers, of one unalterable nature. It is not so with the waters of *Scarborough*, because they undergo considerable alterations for the worse, by rains, frost, and sun-beams, which beat upon them. And, 6. The volatile, mineral spirits do not exhale so exquisitely quick, and soon, from this our Chalybeate-water, as they do from the *Rock-water*, at *Llandrindod*.

EXPERIMENT I. The Hanlys-Spa Chalybeate Water trickles out, at the foot of a

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hill.

hill, which is full of iron-stone. 2. Water-flates. 3. Mondyc; and, 4. Marcasite of divers kinds. 5. Salt-flates. 6. White metallic earth. 7. A small bed of lime-stone. 8. A short distance from this Spring, lower, and on the other side of the hill, there are coal-works, but have no manner of connection, with this Chalybeate Spring, and there is no manner of doubt, but that there are other minerals in the hill, from whence these Waters issue forth, which as yet are not come to our knowledge.

EXPERIMENT 2. The hill, from which this Water springs, is not very steep, nor in any shape even, but properly interspersed with wave-like vales, and the beds are horizontal, so that neither floods, nor rains, can increase, or mix with it; and as there can be no perpendicular crevices, or clefts in these hills, as it happens to be the case at *Scarborough*; other wild springs cannot have any communication with that of the Chalybeate-water, which is also out of the reach of the sun, and in such a manner situated, that frost cannot affect it. But, were it destitute of this situation, it is so well

well united with the mineral contents, that the strongest frost cannot have any power whatever upon this Medicinal-water-mixture.

EXPERIMENT 3. A glassful of this Chalybeate-water, when taken from the Spring, is not only bright, and clear, but most uncommonly pellucid; nor are there any mineral particles, in any shape, without, or with a microscope, to be discovered in it; but, after standing some time, it changes into a pearl, which gradually turns to an unpleasing, oker colour; then a precipitate ensues, and a fine, beautiful, iron-oker, or a natural *crocus martis*, in the sediment.

EXPERIMENT 4. Thus, by standing, this our Chalybeate-water does not separate its texture, by a cuticle on the surface, as many other Chalybeate-waters do, that are destitute of salts. This water deposits also a sediment in the current from the Spring, of a very fine, natural, iron-crocus.

EXPERIMENT 5. The taste of this our Chalybeate-water is very brisk, and pungent,

and full as pleasant of the iron ore taste, and smell, as any of the famous springs of the Mineral-waters, at the renowned *Spa* in *Germany* possibly can.

EXPERIMENT 6. The ferruginous particles, or the natural crocus of iron, which precipitates itself in the current, from this our Chalybeate Spring, contains that well known unctious matter, which adheres to that species of iron ore, that belongs to the *Hæmatites* class, which sooner, and more powerfully pervades animal bodies, than quicksilver; and therefore deserves the attention, and a farther examination from skilful Naturalists.

EXPERIMENT 7. This Chalybeate-water, we are treating of, contains a large portion of this, as related in Experiment 6, iron-mucilage, infomuch, that some will adhere to the sides of the glass, after 6, or 7 times drinking out of it, without washing the same.

EXPERIM. 8. The natural *Iron-crocus* deposited by the current, from this Chalybeate Spring, when thrown into an ignited crucible,

ble, the sulphureous effence appears, which emits such a suffocating, blue flame, and smoak, as other minerals, that abound in brimstone, do, and is so strikingly-offensive to the sense of smelling, that a real sulphur cannot be doubted.

EXPER. 9. There is not only in this our Mineral-water, but also near its Spring, a sulphureous smell, very perceptible; this is by late Naturalists, particularly, by Dr. *Charles Hoffman*, accounted to be a certain sign of salt, in the Mineral-water-mixture.

EXPER. 10. Decoction of galls changes this Chalybeate-water into a deep purple, inclining to blue.

EXPER. 11. Infusion of galls, with water, and the tincture of galls, made with spirits, change this Water into a colour, like red Port wine, which, on standing, alters into a deep violet, blue colour.

EXPER. 12. Powder of galls changes this Chalybeate-water into a deep purple, and powdered granate-peels into a blue colour.

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EXPER. 13. Flores balauftior change this Water into a Claret-like colour.

EXPER. 14. Syrup of violets, and the juice of blue flowers, when mixed with this Chalybeate-water, change it immediately into a green colour.

EXPER. 15. All before related colours, may be discharged with the helps of vitriolic acids, and the Water restored to clearness. Those with the syrup and flower juices excepted.

EXPER. 16. Spirit of nitre causes a small effervescence with this Chalybeate-water, and a scum on the surface.

EXPER. 17. Oil of vitriol causes heat in this Water, but not so sudden, or great, as in the saline water.

EXPER. 18. Spirit of salt, aqua fortis, spirit of vitriol, acid liquor, made of brimstone by the helps of the bell, and the sulphurated spirit of sal-ammoniac, cause no alteration in this Chalybeate-water, but keep it clear,

clear, and transparent, and cause many air-bubbles to adhere to the sides of the glass.

EXPER. 19. Solution of silver causes in this Water, at first, a milk-white, which very soon changes to an amethyst colour.

EXPER. 20. A solution of sublimated, corrosive mercury, causes a white colour in this Water, which precipitates into a yellow one.

EXPER. 21. Several tinctures of cochineal, of different strength, cause with this Water, at first, a fine, bright purple, which, on standing, changes to a beautiful blue.

EXPER. 22. Infusion of Sant. Rub. causes a brown red colour with this Water.

EXPER. 23. An infusion of lig. campech. causes a deep, blue colour in this Chalybeate-water.

EXP. 24. Solution of iron-vitriol, makes this Water turbid, of an oker, yellow colour, which does not change, when precipitated.

EXP. 25. Solution of copper vitriol, causes in this Water, a white precipitate, without

without any mixture of the copper, which remains dissolved; and with its natural, blue colour, mixes with the Water, above the precipitate.

EXP. 26. Solutions of alum, salt petre, and sal armoniac, cause no alterations, when mixed with this Water.

EXP. 27. Salt of tartar, liquified in a damp place, makes this Water milk-white, and precipitates in the same colour.

EXP. 28. Solutions of pearl-ashes, salt of wormwood, and a solution of salt of lead, act in the same manner, with this Water, as in Experiment 27.

EXP. 29. White vitriol dissolved, and mixed with this Water, causes a white, but, on standing, the precipitate appears of a yellowish colour.

EXP. 30. Spirit of sal ammoniac, and of salt of hartshorn, cause in this Water a white, and a precipitate of the same colour.

EXP. 31. The white earth, obtained by the precipitation with alkalies, being welledulcorated, and the salts separated from it,
does

does not in the strongest reverberatory fire change the white colour.

Exp. 32. Of this Chalybeate-water, 25 ounces were evaporated in a glass-receiver, which left two drams, or 120 grains of sediment.

Exp. 33. Oil of vitriol, and all strong acids, cause an effervescence with this sediment; but the salt, when separated from it, neither acids, nor alkalies, have any effect upon.

Exp. 34. The sediment of 25 ounces of this Water, produces about 60 grains of neutral salts, which shoot in long spangles.

Exp. 35. The remainder of the sediment, is more than one half, dissolved iron-mineral; about 19 or 20 grains of white metallic earth, and 6 grains of sulphur, or complete brimstone.

Exp. 36. Both the iron, and metallic earth stand all the tests, and criterions of the fire, as is natural to them, and full as much as is necessary to prove their identity.

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EXP. 37. The volatile spirits of this Chalybeate-water, are of the same nature with those of the Saline, Purging Water; but they partake of those exhalations, that are natural to iron-ore and brimstone.

EXP. 38. The sediment of this Water when levigated, mixed with arsenic, and sublimated, produced a fine, orange-coloured, transparent substance.

EXP. 39. Rhenish wine, or rough cyder and sugar, when mixed with this Water, cream immediately, sparkle, and drink very pleasantly.

EXP. 40. The salts of these Waters, after chrySTALLIZATION, and exposed to the air, will not emit any whitish powder, as is natural to the *Cheltenham* and *Scarborough* salts, which contain alum.

THESE Experiments, I hope, will be deemed sufficient for ascertaining the virtues and properties of the *Hanly's-Spa Chalybeate-waters*, to which I beg to add a few Observations.

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OBSERVATION I.

ACCORDING to these, or any other Experiments, that may for the future be made, on these Waters, it does, and at all times will indisputably appear, that they are excellent Chalybeate-waters, which contain, Volatile Mineral Spirits; 2. A Volatile Iron-Principle; 3. Iron-ore, finely dissolved; 4. A neutral Salt; 5. Sulphur, or common Brimstone; 6. White Metallic Earth; and, 7. Water, as the Vehicle, to all these ingredients.

OBSERVATION II.

THAT these Chalybeate-waters, are of the same nature, with the waters of *Scarborough*, and *Llandrindod*, will more satisfactorily appear, by comparing these Experiments, with those of Dr. *Shaw*, on the first, and my own, on the latter. But, if this is not sufficient, the curious investigators of these natural productions, are most heartily requested, to repeat the Experiments, that are recorded of these three Waters, with such others, as they may think fit; and by these means, they will have

have the opportunity, to satisfy themselves, of the authenticity, and compounds, here related of these salutary Waters.

OBSERVATION III.

IN the above Experiments, we have a few instances, indisputably pointed out, that the Hanlys-Spa Chalybeate-waters, have not only the advantage, but greatly the superiority, to the celebrated waters of *Scarborough* and *Llandrindod*.

OBSERVATION IV.

WARM baths made of Chalybeate-waters, have been justly in very great reputation, but in many places, undeservedly neglected for 50 years past. Such Chalybeate-waters as are replete in salts, have, by the best judges, been deemed the fittest for this purpose; which is also verified by natural reason, and experience; wherefore, as this our Chalybeate-water, as is evident from these Experiments, contains a greater quantity of salt, than any other now known in *England*; it will therefore be found, the very best for this purpose; in case, the salutary practice of

of bathing in these Waters should be revived.

OBSERVATION V.

THIS our Chalybeate-water, contains the same, natural ingredients in the best perfection, and in a sufficient quantity, with those, which compose the celebrated waters of *Pyrmont*, and *Spa*, in *Germany*, as is evident from the before-related Experiments; and if drank at the Fountain-head, will cause and promote the same salutary effects. N. B. I mention in particular, to be taken at the Fountain-head, because it will not bear carriage, and loses its virtues when exported; the only quality, in which it differs from the *Spa*, and *Pyrmont* waters.

OBSERVATION VI.

FROM these before-related Experiments, we learn, that this, the Hanlys-Spa Chalybeate-water, to a most desirable degree, is composed in Nature's Laboratory, with all similar ingredients, that saline, Chalybeate-waters possibly can be endowed with; and therefore, we have a most excellent natural
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medicine in this Water. But then, it is with this, as with all other most powerful Medicines, the Almighty Creator has blessed us with; that they are as powerful to do hurt to the human constitution, if injudiciously used, as they are able to do good, when properly taken. I therefore, beg leave to give this general and well known caution, to all Drinkers, and Visitors of this mineral, water Fountain; never to make too free with, or to handle this two-edged sword, in an ignorant, and unskillful manner.

CH A P. IV.

The Virtues and Properties of Mineral Waters, that are in the same Class, with the HANLYS-SPA WATER, considered.

THAT mineral Waters, by virtue and helps of those contents, which they have imbibed, and are incorporated with, by passing thro' beds, or veins of minerals, can much sooner pervade, and penetrate thro' the animal body, than common water is capable of doing, is an indisputable fact, grounded

grounded on a long, and the clearest Experimental Observations.

THE Animal Body cannot subsist without Salt, and the great variety we have of this useful mineral, instructs us, that the *Almighty Creator* provided them, for the several medicinal, and other salutary purposes. The medical salts are, from experience, recommended, and given with a twofold intention, *viz.* to carry off what is corrupted, and to assist the Animal Fluids, in such a manner, as to resist Putrefaction; and as these are the ends aimed at, it is natural to suppose, that those salts, which produce this beneficial event, must mix with the juices, and circulate with them, thro' the whole body; and it is reasonable to conclude, that salts of the finest texture, such as the *Sedlitz*, and *Hanlys-Spa Waters*, are more suitable for this purpose, than the rough, and coarse ones.

DR. HOFFMAN, and all those that have wrote on the *Sedlitz* water, caution us very much, not to give them in complaints of the Stone, Gravel, and Dropsies; because, it seems, they entertained an erroneous opi-

nion, that salt feeds, or promotes the matter which causes the Stone and Gravel; and in Dropsies, they suppose the intestines so much destroyed, as not to be able to bear the weight of the water. I will not dispute the latter, but the Notion, with respect to the Stone, and Gravel, I can contradict from experience; because, Saline, Mineral Waters, have been found of infinite service in these disorders.

By anatomizing, or dissecting such bodies, as have been troubled with the Stone and Gravel, we are instructed, that this disorder very frequently proceeds from many small, inflammatory Abscesses, Vari, or Pimples, about the Papillus; and sometimes of the Arcade, which from the tender twigs of the Arteriæ, & Venæ emulgentis; from whence this matter is either washed to the kidneys, and bladder, or conveyed and deposited upon the joints. And from the chemical Experiments that have been made upon Stones, Gravel, and that matter, which frequently breaks out of the fingers, after a severe fit of the Gout, which, vulgarly is called Chalk-stones, it evidently appears, that
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there is no manner of salt in these earthy, stone-like concretions ; but, too much prove themselves to be of such a hard matter, as comes from these Pimples.

IN this disorder, then, a Remedy is necessary, not only to mollify, and dissolve this matter, which is the primary cause of this most dismal distemper ; but also, to eradicate the inflammations from whence these Vari proceed. An efficacious, natural medicine, of this kind, I expect much more from, than all the boasted Lithontriptics, and Solvents, *of the Shop.*

HIGH-DRIED malt liquor will discharge great quantities of Gravel, in persons, that are afflicted with this disorder ; from whence it has been fancied by some, that by the helps of this liquor, the Gravel might be cured ; but this is a very erroneous opinion, because the discharges promoted by high-dried malt liquor, do not diminish, but increase the matter that causes the Gravel, by increasing the inflammation, whereby more Vari or Pustules are brought on, and,

of course, more matter produced for forming the Gravel.

ABOUT twelve years ago, I was sent for to a patient of about 50 years of age, who, for the last five years, had lived an indulging, sedentary life, had made free with strong malt liquor, brewed of high-dried malt, which brought the Gravel upon him. For the first two years of his disorder, *Holland Geneva* would ease and give temporary relief to his pains, but this proved at last too weak for his complaint, which continued increasing. When I was called in, I found him under a violent Cholic, with feverish heats, most evident signs that the distemper was increasing. Having procured him relief, with Shop Medicines, I considered the great efficacy, I had observed, by bathing external Eruptions, with a mixture of an equal quantity, of Saline, Mineral, and Chalybeate-waters. Why it might not have the same effect upon these internal *Vari*, which are the cause of Stone, and Gravel, I made little doubt of. I communicated my sentiments to my Patient, who was very ready for trying the Experiment. I recommended to him to
drink

drink an equal quantity of Saline, and Chalybeate-waters mixed, several times, in a day, in an alterative manner, and to purge once a week, by the helps of the Saline-waters. He continued this method for three or four months, by which means he perfectly recovered ; and I have experienced the same good success, in several other Patients, that were afflicted with the same kind of disease, to whom I advised the same.

SUCH as make daily too free with malt liquor, their constant, and every morning's complaint is, of an inward heat ; and other symptoms are not wanted, which indicate an inflammation, of some part or other, of the intestines. I remember several of these Toppers, whose inflammatory matter of this kind was conveyed to the joints, and a Gout was the consequence ; which were accidentally relieved by Saline Waters ; of many instances of this sort, within my knowledge, I will relate one.

AN old Coachman, that had lived long in London, by good living had contracted a gouty, gummy, bloated habit of body, inso-much, that he was disabled from following

his employ, as a coachman; and therefore retired with his wife into the country, and near a much frequented road took a house for felling of Ale. And as he was beloved amongst his equals, that constantly travelled between a trading town, and the metropolis, it was natural to expect business. In these hopes, he fitted up his house, and as water was wanted, he caused a well to be digged. At 40 feet deep, they met with water, which happened to be impregnated with a small quantity of coarse salt, and a good deal of marle earth, which made the water soft, so to lather with soap; and the salt taste less perceptible; and as marle earth promotes fermentation, the malt liquor brewed with this water was uncommonly fine. But as this earth has naturally a purgative quality, and being in the fermentation united with the salt, the quality of the ale was so greatly cathartic, that a quart of it was a strong dose; and no salts, or any other taste uncommon to malt liquor could be perceived.

At the Opening of this house, and what is called the House - Warming, this late coach-

coachman had a very numerous meeting; and the fine ale was not spared; but unexpectedly all his guests were most powerfully purged. They were all greatly surprized, at this general and unexpected evacuation; many were the conjectures, but, the Ale was not suspected, until the dose was repeated, and the same effect found by every body else who did drink of it; and as the Alehouse-keeper was remarkable amongst his acquaintance for playing tricks to cause mirth; it was universally believed by them, that he had fined his Ale with Jalap, on the same account: and as the cathartic power continued, he lost all his customers, and was obliged to drink the ale himself; and tho' it daily purged him briskly, yet it never weakened, but on the contrary invigorated him. And he had the satisfaction of being cured from his gout and repletions.

THIS cure soon spread abroad, and came to the knowledge of a neighbouring clergyman, who was in the same condition, whereupon he tried this Liquor, with the same

same good effect, as several others have done since.

A MAN of about 46 years of age, full of flesh, who always lived well, and greatly indulged his appetite in eating of high seasoned dishes, but never made any excess in drinking, and used little exercise, was every morning seized with painful reachings, and vomiting a brown-like slimy substance, of a most disagreeable taste, and smell. His disorder, was called by those he had consulted for the recovery of his health, a Scurvy in the stomach. When my advice was required, I considered, what he discharged by this natural vomiting, as an arthritick, imperfect, gouty matter. And from his sedentary life, the hypochondria could not be doubted. I was not out in my conjectures, because all Antiscorbutics disagreed with him; when, on the other hand, Antiarthritics, never failed of giving him temporary relief; but, finding by repeated trials, that I could do nothing effectual for him, by the helps of artificial medicines, I was obliged to recommend to him natural productions. Saline, mineral, with an equal quantity of Chalybeate-waters, were the remedies that

that restored him to health. He drank of this mixture, every two or three hours, all day long, as much as would give him two or three stools, in 24 hours. And by these means, in about five weeks, he was cured of this disorder.

IN many weaknesses, and relaxations, Chalybeate-waters, tho' they contain naturally a salt, are, without a mixture of the saline, mineral Water, inefficacious, because, the animal juices want to be purified; and the inflammations, which in a manner imperceptibly hang upon them, to be carried off, before they can strengthen, and restore the elasticity of the circulatory vessels. Amongst the many cases of this kind, I have experienced, I will relate the following. A young Gentleman, 21 years of age, of a strong, robust constitution, not in any manner impaired, hunted a whole day in the rain; and in the evening, remained in his wet cloaths till bed time, without changing them, which threw him into a violent Rheumatism; for which he was bled, and being faint after the operation, was laid on the bed; when by accident, the

the bandage loosened, by which means, unknown to himself, and unperceived by his attendants, he bled again, and discharged a very great quantity of blood, before it was known: which loss, brought such a great weakness upon him, that a Consumption was apprehended. However, the means that were used for his recovery, caused a violent eruption all over his body. But this natural effort, by improper treatment, returned into the mass of blood, with the greatest virulence; which rendered his situation still more deplorable. In this condition, a Chalybeate-water, which contained a small quantity of natural salt, was recommended him, which he used for a month's time, without any relief whatever. Upon this unsuccessful experiment, he was recommended to a mixture of an equal quantity of saline, and Chalybeate-water, which he used, for the space of four months, and a happy recovery was the consequence.

THE most remarkable circumstance in this Case, was, that the Patient did not use these Waters, in an alterative manner, and to purge, at such times only, when Nature,
by

by a fulness, indicated such a discharge to be necessary: but, on the contrary, purged almost every day, from the quantity of water he had taken, without an encrease of weakness. Hence it is evident, that evacuations, promoted by Mineral-waters, are never to be dreaded as dangerous, in the most weak and languid constitutions.

WHILE I am writing this, I recollect another Case, which proceeded from a weakness of the nerves in the abdomen, of which the consequence always is an irregular Motus tonici; and those contractions, called Convulsions, are the unhappy effects. The Gentleman, that was afflicted with this kind of disorder, was cured by a mixture of saline, and Chalybeate-water. I therefore beg leave to relate it here.

A GENTLEMAN of the age of 34, who the most part of his life resided in *London*, was periodically, once in 24 hours, or once in two or three days, seized with spasmodic contractions in the thorax; which in some measure, resembled a Catharrus suffocativus, in so terrible a manner, that the poor sufferer

ferer panted for breath, lost his speech, and foamed at the mouth; in short, these fits very much resembled an Epilepsy. The morbid matter appeared to be lodged in the Abdomen, and the Patient always knew, from 30 to 45 minutes, when the fit was to come upon him; and the immediate, or temporary relief, that could be given him, was to expose his face, as much as possible, to the air. When he came under my care, he had been freely handled with the lancet. Vomits and purges had not been spared, and therefore, there was no necessity for any of these Generalia. I advised him to take an equal quantity of Chalybeate, and Saline, Mineral-waters, in small doses, every other hour; and by these means, he perfectly recovered.

ALL great towns have their peculiar Complaints; in *London*, an Asthma is one of those that mostly prevails, and therefore a remedy for this troublesome companion cannot but be acceptable: and I will only relate one Case, of the many, that have been under my Care. Of *London-Asthmas*, which hap-

happily have been relieved from this disorder, by the Saline and Chalybeate-water.

A woman, aged sixty years, and upwards, who had lived from the 18th year of her age, in *London*, as a servant, at the age of forty, was seized with a violent Asthma, attended with a cough, shortness of breath, indigestion, and loss of appetite. She had the assistance of several of the most eminent Gentlemen of the Faculty, in *London*; and with great regularity took the medicines prescribed, for several years successively without any relief. When the Shop Medicines failed, she had recourse to most of the Mineral-waters near *London*, which also proved without the desired effect; then she made use of the *Bristol*, *Bath*, and the *Breconsfrire* sulphureous Waters; but all to no purpose. After this, she became my Patient; I recommended to her the drinking saline and Chalybeate-waters, in the same manner, as I had directed the last mentioned Gentleman, and I had the pleasure to see her perfectly recovered, after 40 days regularly drinking them.

Not

NOT only in particular, but in all kind of weaknesſes, an equal mixture of ſaline, mineral, and Chalybeate-waters, are far preferable to ſuch Mineral-waters, as have not any natural ſalts in their compoſition. I have remarked this, in ſeveral inſtances, but I will only relate one Caſe, in which the moſt celebrated Waters in this kingdom failed, of a cure, when at laſt it was happily compleated by the Chalybeate, Saline, Mineral-water-mixtures.

A YOUNG Man, 20 years of age, was afflicted with a Gonorrhœa ſimplex; not contracted from a venereal infection; and therefore, more difficult to cure. He was ſo bad, that a conſumption was viſibly coming upon him; there was nothing omitted by his friends; but as ſoon as they came to the knowledge of it, cauſed proper means to be made uſe of for his recovery; and when the Materia Medica would yield no relief, he was ſent to *Briſtol*, and from thence to *Bath*, and for a conſiderable time uſed theſe Waters, under proper advice; and when theſe failed, the *Lyncomb* Chalybeate-waters, near *Bath*, were alſo fruitleſly.

lessly tried. Some months after, he had made use of these waters, he became my Patient, and was compleatly cured, by an equal mixture of Chalybeate, and Saline, Purging-water. N. B. It must be observed, that he constantly had taken a small quantity of Glauber Salts, with the *Lyncomb* Spa-waters; a method, frequently recommended, where the Chalybeate-waters, as those of *Lyncomb*, are without salt; but I never could, from Experience, find any greatly salutary effects from it.

I CANNOT omit to relate a cachectic hypochondriac Case, which is extremely similar to the 76th case of Dr. *Springsfeld*, related in his History of Cures, performed by the *Bohemian, Caroline* waters. My Patient, at the age of 45 years, in boggy places, contracted in the same manner, like him mentioned by Dr. *Springsfeld*, a most irregular Circulation of the Animal Fluids, so as to become compleatly cachectic; and as this most learned Gentleman very justly observes, that the cause ought to be looked for, in *Visceribus nimis laxis; et debilibus*, my Patient had used various means for his recovery.

covery, and had consulted several eminent Gentlemen of the Faculty; but, the remedies, that were prescribed for him, made his disorder worse. Whereupon, he was sent to *Bath*, which was very proper, because *Bath*-waters are a most excellent medicine in diseases of this kind. Yet, they were no manner of service to this Gentleman. About six months after his return from *Bath*, I was consulted by him. I recommended to him an equal quantity of Chalybeate and Saline, Mineral-waters; by which he was restored to good health.

Thus, we see, how great improvements there can be made, with Chalybeate-waters, if they are mixed with the natural, saline, purging waters. Hitherto we have treated of an equal mixture; and it is necessary to inform our readers, that we observed in many cases, that an equal quantity of these waters, would by no means be efficacious; but did extremely well, if the Chalybeate-water was the greatest portion in the mixture. And tho' this does chiefly depend upon the constitution of the Patient, yet

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we will relate some Cases, in which the Cures were performed with three parts of Chalybeate, and one part of saline, Mineral-water.

A young Fellow, of 20 years of age, of a phlegmatic temperature, for the first 13 years of his life, was low, or rather miserably poor, but, at the age of 13, he was taken into a gentleman's family as a servant; where he indulged his appetite both in eating and drinking to excess. At the age of 18, he was visited with a severe fever; for which no manner of medical assistance was administered, but, he was left entirely to the determination and mercy of provident Nature. The consequences of this illness, were swelled legs, which excoriated, and discharged matter of various colours, with a foetid, offensive smell. In this condition he was obliged to quit his service, and return to his parents, where he had nothing to subsist upon, but his original, poor diet. But this, did not in the least alleviate his disorder, which continued increasing, and for the space of two years, he tried

many remedies, but all in vain. In this condition, he came to me for advice; I recommended to him the saline, purging waters only, but they made him vomit for three days successively; whereupon, I advised him to mix an equal quantity of Chalybeate-water with them; but they made him sick, with giddiness in the head; at last, three parts of Chalybeate, and one of saline Water, agreed with him. And in this manner, he used the Waters for a considerable time, whereby he was restored to perfect health.

THERE is no manner of doubt, but that all mineral waters are of real service, in some degree or other, especially in scrophulous cases; and that some waters, tho' of the same *Genus*, are preferable to others, is a truth, of which Practice has convinced us. I have seen many surprizing cures performed in this disorder, by several different mineral waters: but then, it always required a considerable time to bring these salutary effects about. In general, the saline waters are looked upon, as the most proper remedy in this

this Complaint; nevertheless, I have more than once observed, that a mixture of Chalybeate, and Saline-waters, in which the Chalybeate has the greatest share, have much sooner performed a cure, than either of them, when used separately.

A Boy of about 14 years of age, was in an uncommon manner affected with the King's Evil; several ulcers were about one elbow and knee, and considerably large tumours at his glands, about the joints, and other parts of his body; he had been bathing, and drinking the Sea-water for a long time; by which he was not in the least benefited. Soon after the use of the Sea-water, his eyes became very much inflamed. But this I attribute to his not bathing properly, and not dipping his head sufficiently under water. When he came under my care, I ordered him at first, the saline, purging Waters. But, as they purged in small doses, I observed, that the tumors, and ulcers were hardly affected by it. Wherefore, that these Waters might act as an alterative, enter the circulation, and mix with the fluids in his body, I recommended to him

an equal quantity of saline and Chalybeate-waters; but, as he was of a lax habit of body, even this, in very small quantities, would frequently purge him briskly; and Chalybeate, without the Saline-water, would greatly increase the inflammations of his eyes. Upon this, I desired him to take three parts of Chalybeate, and one of the Saline-waters; which happened to agree extremely well with his constitution; and by a regular use thereof, for six, or seven weeks, he obtained a compleat cure.

In immoderate fluxes of the Menses, where the Chalybeate-waters, with spirits of vitriol, have failed, a mixture of Chalybeate, and Saline-waters, have succeeded to admiration. Chalybeate-water, and spirit of vitriol, is a very common remedy in these complaints, but very frequently it is found to be detrimental to those that are of a delicate constitution, by contracting the vessels: that they either discharge too much, or too little, of such matter, as the constitution should be freed from; which are very great inconveniences, but they are not to be feared, from the before-mentioned Mineral-water-

water-mixture. I will relate one Case on this subject, and therewith conclude this Chapter.

A WIDOW Gentlewoman, about 33 years of age, of a very tender habit of body, was often seized with an immoderate flux of the Menfes, attended with great weakness, and palpitation of the heart, a chilliness, and frequent tremors, with a giddiness and pain in the head, and other hysteric symptoms. During the intervals of the Uterine Hæmorrhages, the Fluor Albus, by an incessant discharge, rendered her extremely weak, and feeble; which manifested itself by a loss of appetite, a yellow complexion, swellings of the legs, and from an impoverished state of the blood. Strengthening and cordial remedies were administered to very little purpose. Then a most eminent Physician ordered her to drink, every morning Chalybeate-water, with a few drops of spirit of vitriol in it. This did give her some relief, for a short time; but then the disorder returned with greater violence. In this condition, she became my Patient: I advised her to drink three parts of Chaly-

beate, mixed with one of Saline-water; from which she soon found remarkable benefit, and recovered from all her complaints, and continues free from them ever since, which are now upwards of eight years.

C H A P. V.

The Transmutation of DISEASES considered; and the most proper MINERAL WATERS for their Relief, pointed out.

MEN, or the Human Animals, to distinguish them from Brutes, are called rational Creatures; they are endowed by the *Almighty Creator* with such excellent qualities, as enable them to distinguish *Good* from *Evil*. Wherefore then, this *human Animal* cannot be ignorant, of what tends to its own preservation, and from simple, natural observations, can easily discover, or find out those things, which are the most wholesome, and best adapted to the conservation of his Constitution. He cannot, under these advantages, be a stranger to that
which

which will destroy his health, and make him miserable. But let us take a practical survey of men, and we shall soon discover a perverseness, which clogs, or obscures these exalted faculties, to so great a degree, that the machine is plunged into destruction, by their own imprudence.

It is needless to expatiate on this subject, because it is too well known, that irregularities, of every kind, are the main cause, of bringing on most of the diseases, that are incident to mankind. Now, it were to be wished, when the patient is afflicted, that the rational powers would reassume, and exert their functions, as kind Nature does her utmost to expel the morbid matter, and to assist her in the expulsion of these pernicious contents; by which the machine, or frame of the body, was brought into disorder. But here again we meet with another instance of human obstinacy, that, either salutary means take up too much time, or are wholly neglected; or else, improper remedies made use of. Thus the primary disorder is changed into a worse, which originally might perhaps have been only an effort

fort of Nature ; or might, by proper applications, have been made such ; and consequently a large train of miseries, or an untimely destruction of the whole body, have been prevented.

IN this manner, disorders are corrupted, and diseases altered from one genus, into another, which at best end in Chronical Distempers : and when the Shop-Medicines fail of a cure, then they are consigned over to the Medicinal, Mineral-waters. As these are the chief patients that come to these fountains for relief, and as it is in the nature of things impossible, that one sort of Mineral-water can be an universal remedy for all different disorders, and therefore liable to make wrong applications, by unskillful and ignorant advisers ; we therefore will dedicate this Chapter on corrupt or transmuted Diseases ; * to such, as have suffered under this bad treatment : and inform them what species of Mineral-waters are most proper for their removal.

IT

* They may be justly called, Transmuted Diseases, because they proceed from real changes, brought on from bad to worse.

IT is a well known truth, and in part has been already observed, that chronical diseases are brought on, by several means, *viz.*

1. By Intemperance. 2. By Neglect, that is to say: When nature mistakes her wonted operations, and the body begins to be out of order, easy and proper remedies, to assist Nature, and to guide her into the right road again, are neglected. 3. Chronical distempers are too frequently contracted by preservative remedies, such as bleeding, vomiting, bitter drops, stomach-powders, with many other things made use of; (N. B. Medicinal Mineral-waters not excepted) at such times, when there is really no occasion for them. 4. Disorders are also converted into others, by hindering Nature in her efforts, and injudiciously stopping natural, and unforced Vomitings, Purgings, Hæmorrhoids, or other Defluxions; and also, 5. By a total interruption of the operations of Nature, by a bad Regimen, and improper Medicines.

ON a serious consideration then, it will appear a most evident Fact, that many dismal consequences are brought on, by the ignorance,

norance, and unskilfulness of many Physicians. In the Chirurgical Science, how many Cripples do we see, who are actually brought into that condition, by the ignorance or neglect of the Surgeon, under whose hands they were entrusted? And if the Medical Male-treatments left the same visible evidences, it would reduce many Physicians, from their Chariots, to walk on Foot.

ALL disorders arise from a matter, that is repugnant to the animal fluids, which Nature endeavours to expel; from whence uncommon motions are excited; and if the malignant matter cannot be separated by these intestine, voluntary motions, then the body becomes disabled, and the sickness is come to that stage, that medical assistance is required for relief. This is the critical time, when that true knowledge is necessary, whereby Nature must be relieved of her burthen in the easiest manner possible. And by separating this matter, a proper regard must be had, to preserve an uninterrupted, beneficial circulation; otherwise Death, or at best, a Chronical Disease will be the consequence.

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IN the medical Administration, it is particularly necessary to be extremely cautious; because remedies, and all that belong to them, are unnatural, and diametrically opposite to the œconomy of the human body, and the motions of the vital fluids. It is therefore highly necessary to consider, if the matter, which opposes Nature in her salutary operations can be corrected, and carried off, by some one or two separatory organs; and, if that can be done, it is most certainly *Male-Practice* to make use of all the united medical powers; which, at best weaken the Constitution, to such a degree, as to require Bracers, and Strengtheners, for ever after.

NOTHING can be more rational to our comprehension, than this; that when the primary disorder is neglected, or the morbid matter, by wrong treatment, dispersed thro' the whole frame, and neither properly matured, nor duly separated from the fluids, that support the machine, and not totally discharged; the consequence must be bad, and it requires no great sagacity to pre-
sage, that this matter, that is so unnatural,

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to the human constitution, must disturb and much more disable the frame, than in the beginning of the distemper; and also change the same into another, or different disorder, from what it was before.

To give a detail, in what manner disorders are neglected, mis-treated, or from improper medicines, removed from bad to worse, would take us too much from our present design; and may perhaps be the subject of another work. We therefore, will consider a few of these changed, or transmuted distempers; particularly, such as will lead us to, and are connected with the use of Mineral-waters.

THE morbid matter, if left dispersed, and undischarged in the human body, if it remains inwardly, will bring on, 1. Schirrous and cancerous obstructions of all kinds, intestine ulcers, sweats, total contractions, and all such disorders, as are thereon depending. 2. If this matter works to the extremes, swellings, external eruptions, &c. &c. are the consequences. It is 3. also very often a promoter of a waste, or total destruction

struction of one, or two particular limbs, or parts of the body. And 4. this matter will cause unnatural discharges, with many other appearances, unnecessary to mention here, because the major part of the afflicted, which come for relief to the Mineral-water Fountains, are comprehended within these divisions.

A COUGH may be brought on by a defluxion of humours, from the head to the lungs, or from some other part of the body; and the appearance may be such, as if the lungs were really debilitated. In this case, expectorating medicines, according to the common practice, are given, and so long continued, till almost all the defluxions of the whole body are invited to the oppressed lungs. Insomuch, that at last they must yield to be really infected; which would have been prevented, if the disorder at first had been rightly understood, and properly treated. In this Case, Mineral-waters in general, even the *Thermæ*, are serviceable; but where on the contrary, the disorder proceeds from a real inflammation of the lungs, there they are highly prejudicial, a few

few only, such as the *Bristol* and *Selters* Waters excepted.

It is a controverted point, whether or not, Bleeding should be used in Palsies; both parties contend very strenuously for the establishment of their own favourite hypothesis. However, in this, as in all other Cases, the extremes on either side should be avoided; because it is a most certain truth, that by too frequent bleeding, by way of preservation, Palsies may be brought on, and therefore, this evacuation, in the before-mentioned disorder, ought to be made use of, with the utmost caution; and never to be admitted, unless a Plethory appears, in the most visible manner, viz. by a bleeding of the nose, or an hæmorrhage, from any other part of the body. But where these indications are wanting, it is certainly male-practice to bleed, because an improper use of this, or any other violent evacuation, will fix this disorder, that neither artificial, nor natural remedies, can have the least effect upon it.

Dr.

DR. MEAD, in his Medical Precepts, totally explodes the use of *Bath-water*, in this distemper: he assures us, that he has known some Cases of Paralytics, sent to *Bath* by a mistaken judgment of their Physicians. The poor creatures, upon coming out of the *Bath*, were seized with a return of their Apoplexy, which carried them off.

ALL that is advanced here, is a most certain, and undoubted fact. But then, this is to be understood of those, where an Apoplexy preceded the Palsy; nor do I find, that these Patients were properly prepared for bathing. And in this, I apprehend the mistake lies, which the Dr. complains of. Because it is known from experience, that in this, and all other kinds of Palsies, when previously prepared internally, with Saline and Chalybeate-waters, then, bathing in naturally Hot-waters, has produced very good effects. But yet, the bathing in Saline and Chalybeate-waters, made hot with metallic slags, from the smelting furnaces, exceeds all other Baths whatever, in the cure or relief of this disorder.

* The Medical Works of Dr. Richard Mead. Vol. III. p. 36.

It has in all ages, been a custom amongst the Medical Tribe, to contrive and invent medicines, for correcting the morbid matter, without thinking of a proper separation, and discharge. Of the same from the vital fluids, when oppressed with it. This opinion has also made its way, and done very great hurt, in the Mineral-water Practice; because such waters, in particular the naturally hot ones, which have no purgative quality, are chosen for tender, weak constitutions; with intention, to correct and blunt the edges of the acid, or other sharpness, of which the morbid matter is supposed to consist; and the water from its natural heat, is believed to be an Alkali. Many more like this, are the imaginary hypotheses that are entertained amongst the Faculty, to the great prejudice of numbers, that are heavy-laden with diseases. We therefore cannot sufficiently caution, against that pernicious practice of using all kinds of Mineral-waters, whether hot or cold, which have no purgative qualities, without proper evacuations, judiciously adapted to the constitution, and disorder of the patient.

SUCH

SUCH as labour under a weakness, brought on, by the Fluor Albus, Gonorrhoea-Simplex, and such like destructive Diseases, are most frequently sent to *Baths*, for a cure, and also for the recovery of strength, on a general supposition, that *Bath-waters* are of a strengthening nature; as undoubtedly they are, if properly managed. But then, they cannot promote these desirable effects, unless the matter, which causes the disorder, is properly separated from the vital fluids. And this most salutary consequence is with nothing better obtainable, than by a mixture of Saline and Chalybeate-waters; and when the matter is properly discharged, then Baths prepared of Chalybeate and Saline-waters are much more invigorating, than the naturally Hot-waters possibly can be.

I know I shall be contradicted, yet nevertheless, it is a certain fact, that most hypochondriac, and hysterical disorders are brought on, from too free an use of all the united medical powers. Because, on the slightest occasion, some blood must be taken away; a composing, nervous draught suc-

ceeds this; to bring the stomach right, vomits are not neglected; to clear the head, and to empty the bowels, blisters and drastic purges are not spared. All these Health-destroying Materials are so long continued, till they have not any visible effect upon the Patient; because the constitution is either injured to it, or totally destroyed. But, if yet the least spark of animal strength is left, Nature will make her efforts in those spasms, which are called Hysterical, or Hypochondriac Fits. Because, in this Case, the circulatory vessels have yet a small share of their re- and propelling powers remaining; and therefore, drive on the vital fluids, as much as they possibly can. But, as a sufficient power is wanting, these spasmodic Fits are the consequence. At this juncture, the natural bracers, and strengtheners, viz. Mineral-waters, are the last resource; because the artificial *Materia Medica* being totally exhausted, the natural must succeed. And here again the same wrong, and unnatural method pursued in the former, is continued with the latter.

Bath,

Bath, Bristol, and Tunbridge, are the receptacles, to which these unfortunate persons are consigned; and these Waters would not be amiss, being excellent in their kind: but then, a proper use, or application is the point, from which salutary effects can be expected. Because these disorders, altho' the whole Machine is weak and feeble, are not without a morbid matter, which must be evacuated, with the most mild, natural remedies, before any recovery can be expected. (The artificial ones are in these cases made use of to no manner of purpose.) Wherefore then as the *Bath, Bristol, and Tunbridge-waters*, have not any evacuating qualities, such as are most proper, must be added to them; and where that is neglected, hectic and other fevers are the unavoidable consequence. As this is the case, it is much more prudent in those that are afflicted with these disorders, to make use of such Mineral-waters, as are endowed with natural, evacuating qualities.

FEEBLE, or thin, weak-nerved women are in general the greatest breeders, which undoubtedly makes them still more tender,

and also exhausts their constitutions, in proportion to the miscarriages, and children they bring into the world. These then are the only patients I know of, to whom the *Bath* and *Bristol-waters* are serviceable, without any other aid or assistance.

DR. DOLÆUS informs us of a patient, that was afflicted with the jaundice; when the artificial *Materia Medica* failed, for two years, under his Physician's direction, made use of Mineral-waters, that were destitute of natural, evacuating contents. But without any success at all, and the disorder terminated in death. Whereupon, the corpse was opened, and in the gall-bladder were found five stony concretions; when they were put into water they sunk, and when washed, they found them all crusted over with iron contents, in so much, that the loadstone would attract them very readily.

Too often are fevers, by bad management, conveyed into the extreme parts of the limbs, instead of eradicating them out of the body; and all this may be done by
an

an improper application of the very best remedies ; the *Peruvian Bark* in particular. Male-treatments of this sort bring on violent pains in the extreme parts, which too often are pronounced Rheumatic, when in fact, the fever, and part of the specific medicine, are lodged in the bones, and cause the pain. For this supposed rheumatism, bathing either in cold, or naturally hot water is too frequently recommended, without any regard to that feverish matter, and part of the *Materia Medica*, which are the cause of the pains, and if not properly discharged, this unnatural bathing will at best make a cripple of the patient, and cause a third disorder, far different from the two first.

HERE I shall be contradicted, and experience will be appealed to against me, *viz.* That if in these cases, evacuating Mineral-waters are used, the fever will return. I grant, that this frequently is the case ; but then it is the very best thing that can happen ; because fevers, returning in this manner, are never dangerous, nor stubborn ; but may be easily subdued with these Mineral-waters,

ral-waters, to very great advantage of the sufferer.

I HAVE already observed, that this subject might be very much extended, but my present intent is, to exhibit only a few hints, and that, for twofold reasons, *viz.* to make such as resort for relief, to Mineral-waters, sensible, that these waters, like other remedies, greatly differ from each other in their qualities. Therefore, they should chuse such only as are most proper, and never use them without a judicious guide, or director; and 2. the dispensers of these natural remedies, I mean the Physicians that prescribe them, should consider maturely their patient's complaint, and the peculiar quality of the Water, before they recommend it; that what holds good in one case, may do so in all others.

CHAP.

C H A P. VI.

CASES of CURES, performed by the HANLYS-
SPA-WATER.

NOTHING improves Medical Learning more, than Cases of Cures performed, and the more minutely these cases are drawn up, without neglecting the most trifling circumstance, the greater they are in their instructive consequences.

MINERAL-WATERS have been used in the most early times ; but is it not amazing, that we find no where a morbid History, from Writers of the former ages, of Cases, and Cures, performed by these kind of waters ? All that we have on this head, is within the present century, not of 70 years standing. Dr. *Pierce*, in his *Bath Memoirs* ; and Dr. *Russel*, in his *Dissertation on Sea-water*, are the only Gentlemen I know of in this nation, that to any useful purpose have collected, and published Cases. Dr. *Seip, Junior*, Dr. *Tilling*, Dr. *Springsfield*, and an anonymous Physician at *Wisbaden*, are the collectors in *Germany*, that deserve any consideration

sideration on this so beneficial, and important subject.

As the publishing Cases of Cures performed by Mineral-waters, is of such a late date, and so very few have made attempts, it cannot be otherwise expected, but, that the Morbific History, in this branch of the Medical Science, must be very defective. Next to this, there are other almost insurmountable impediments in the way, for obtaining perfect cases of this kind, for this plain and obvious reason, *viz.* most of the Patients, that come to these Fountains, for the restoration of their health, have been under the experimental hands of our Faculty; an improper use of the united medical powers, is the chief, and only agent that sends them there. Under these circumstances then, it is impossible to expect an honest confession of the blunders, the Doctor has jointly committed with his Friend Mr. *Comprehensive.*

To draw a Medical Case well, the most minute circumstance, of every stage of the disorder, or change into another disease, ought

ought to be particularized; but this seems almost impossible to be done, by those that practice at Mineral-water Fountains, because, when these truly miserable objects, that have taken several journies thro' Apothecaries shops, come to these natural medicines, and are most circumstantially examined, seldom or never, can give a regular account of their sufferings; but ever will exclaim, to the most material question, and say, *O, Doctor, I was, and am still so bad, and so full of Pain, that I really cannot describe to you how I was, or how I am now.* Something to this purpose is always the answer I get, from these patients, when I interrogate them about their distemper; and as this is the case, we must content ourselves, in relating the appearance of the disorder, and the state the poor sufferers are in, when they come for relief to the Mineral-waters, and then from time to time most carefully observe the operations, and the effect these waters produce. If this method, tho' greatly defective, in general were observed, by the *Gentlemen* that practice at these places, and the most remarkable cases communicated to the public, the advanta-

ges gained thereby would be very great, and much enlarge the use, and utilities of Mineral-waters.

THE Cases of Cures performed by the Hanlys-Spa-waters, do not only labour under the disadvantages I have complained of, but also are most of them performed, with the greatest irregularity, in the use of them; wherefore, the only benefit that accrues, in relating these cases, is, that they are certain evidences, of the identity of the distempers they have cured. And in this point, I have proceeded with the utmost care and caution; where I could not make out the Disease, with an exact precision, I rejected the case, as useless to my purpose; by which means, a far greater number than I here present to the public, are left unrecited. The method or plan, is in the following manner.

THE First are the Cases of Cures which are communicated to me by . . . *Ramsay*, the woman who hitherto has attended at this Spring; they have also the concurring testimonies of several other creditable people in this Town, and neighbourhood.

2. CURES performed on persons, that confirmed the truth, and related the particular circumstances themselves, to me.

3. AN account of such Cures, as were performed under my own inspection.

4. ALL slight cases I have neglected, and regarded them as trifles, I mean such as the Rickets, or other disorders, that can be cured with common water, or will yield to an easy remedy.

5. I HAVE chose such cases only, where the disorder has perfectly baffled the artificial *Materia Medica*, and where the discovery, was intirely owing to this natural Medicine, the Hanlys-Spa-Water.

I. CASES *which were communicated by*
RAMSAY.

1. ABOUT 18 years ago, L. S. then an infant, of about eight years of age, laboured under a very obstinate Scurvy, with most violent eruptions all her body over, for the cure of which, artificial medicines proved ineffectual ; but, was compleatly restored

to

to health, by drinking and bathing in the Saline Mineral-waters, at Hanlys-Spa.

2. THE succeeding year, E. D. 10 years of age, was brought to the Hanlys-Spa, afflicted with most exquisitely great pains in the stomach; for which she had taken various remedies, without the least success; nor was it known what was the cause of the disorder, but, on drinking the saline Water, she discharged a large quantity of those small worms, which generally are called Maw-worms. She continued the use of this Water for some time, by which means she totally discharged the worm, and was freed and relieved from her complaint.

3. THERE was also brought the same year M. D. to Hanlys-Spa, then at the age of 14 years; she was very much afflicted with a violent inflammation in the eyes, which, from the account that was given of it to me, seemed to be of a scrophulous nature, and tho' various Means were used, yet all artificial remedies had no manner of effect upon her. She was compleatly cured by drinking the saline Waters at Hanlys-Spa.

4. A YOUNG Woman of 16 years of age, came from Whit-Church, about 21 years ago, to the Hanlys-Spa, with a serophulous humour in her eyes, to that violent degree, that she intirely had lost the sight of both. By drinking, and washing her eyes, with the saline, purging Water, she was perfectly cured of this disorder.

5. A WOMAN, that had borne several children, being most severely afflicted with a violent Scurvy, which had a leprous appearance, came about 17 years ago to the Hanlys-Spa for relief; of which she was perfectly cured by drinking, and bathing in the saline purging Water; which was made warm for that purpose. I am told that she is still alive, has continued well, and since this Recovery, has brought several healthy children into the world.

6. A YOUNG Man from Montgomeryshire, 16 years of age, was cured of a most violent Scurvy, and Gravel, by drinking, and washing himself with the saline Waters at the Hanlys-Spa, remains well, and it is now 18 years since this Cure was performed.

7. SOON

7. SOON after the discovery of the saline Mineral-water at the Hanlys-Spa, an ancient woman of about 60 years of age, from *Criegging* in *Montgomeryshire*, came for relief to this Water. Her disorder was a Lameness, and a debility in all her limbs. By drinking this Water, she was greatly relieved from these complaints; and as this happened to be the only remedy, of the many she had made use of, that did her any service, she came constantly every six months, to drink these Waters, for three weeks each time. By this means she kept the distempers under, in so much, that she enjoyed a comfortable state of health; and in this manner, she used these Waters for about 12 years.

8. A YOUNG Woman, at the age of 15 years, lost the use of her limbs, by a violent cold, so that she could not walk in any manner without help, nor move from one place to another, her imbecility was so great. She was compleatly cured by bathing for some time, without drinking, in the saline, Mineral-waters, at the Hanlys-Spa, made warm for that purpose; and ever since remains

mains well from this disorder, which is now 15 years ago.

9. Two or three years after the last mentioned patient, a girl of about thirteen years of age, was brought to the Hanlys-Spa, who also by catching cold, had contracted a swelling, and a total loss of the use of both her feet. Large blue spots appeared in the skin, with very great pains; but, no discharging eruption, or ulcers. She was compleatly cured, by drinking, and bathing in the saline, Mineral-water.

10. ANOTHER Girl of seven years of age, in the same condition, as that related in Case 9, and the disorder contracted in the same manner, by catching cold; was also perfectly cured by drinking, and bathing in the saline, Mineral-waters, at the Hanlys-Spa; and has ever since remained free from this complaint; it is now 8 years since this cure was performed.

11. Soon after the discovery of Hanlys-Spa, saline Water, a Miller from a neighbouring county, came there for relief; he

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was

was not much past 30 years of age. His disorder appeared to be a general waste thro' all his body, and was universally looked upon, as in a compleat consumption; but to the great surprize of all his acquaintance, he perfectly recovered, by drinking this water; and for about thirteen or fourteen years successively, he came every summer, to the Hanlys-Spa, to drink the water, by way of preservative. N. B. For certain reasons, I cannot relate all the circumstances I learnt, concerning this man's disorder, but I am very well satisfied, that it was a species of the *Tabes Dorsalis*, and brought on, by those means, with which this distemper generally is contracted.

12. A YOUNG man from *Montgomeryshire*, at the age of 26 years, had brought on, by immoderate drinking, a decay thro' all his body; with most inveterate scorbutic eruptions, all over his skin: of which he was cured, by drinking and bathing in the saline Water, at Hanlys-Spa.

13. ANOTHER man, about 32 years old, was in the same condition, and contracted his

his disorder in the like manner, as the young man, related in Case 12. He was also happily cured, by drinking and bathing in this our saline, Mineral-water.

14. A Shoemaker, of a strong constitution, after a severe fever, neglected the necessary evacuations, which brought on a swelling in one of his thighs; this he also neglected till it determined in ulcers, and then the artificial *Materia Medica* was for a considerable time unsuccessfully used; in this condition, he came for relief to the *Hanlys-Spa*, where he was compleatly cured, by drinking, and also by washing his wounds with the saline Purgine-water.

15. ANOTHER shoemaker, of about 32 years of age, was afflicted with a disorder, that had all the appearance of a slow, nervous fever, with very great pains in the stomach, for which he used many remedies, but all proving unsuccessful; at last found relief by the saline, Mineral-waters at *Hanlys-Spa*, which he drank for some time, whereupon he discharged a great quantity of small worms; he continued the use of this Wa-

ter for a considerable time, so that he might be sure that all the worms, the cause of his disorder, were discharged.

16. AN aged man, near 70 years of age, had for several years been afflicted with a violent humour in both his legs, which broke out in boils from the knee to his feet, and was so hot, that it disturbed his rest; on repeated purges he would be something easier, but could never be cured till he took the saline Mineral-waters at *Hanlys-Spa*; he drank and bathed the affected parts with them every morning, by which means the humour abated gradually, till it was quite dried up; and no manner of inconvenience ensued from it, but he continued well for at least 10 years after; and then died of another disorder.

17. A SUBSTANTIAL tradesman of this town, of a sedentary life, who indulged his appetite much, was greatly afflicted with a very troublesome Asthma, for which he consulted several eminent Gentlemen of the Faculty, but all failed in the wished-for success; whereupon he went to the saline Waters

Waters at the *Hanlys-Spa*, and from the use of this water, he became free from his complaint. But, as he did not remove the cause, but continued his former way of life, it is natural to expect that the disorder would return; which however he did keep under for several years, though he indulged his appetite, the original cause of his sufferings.

18. NEAR the same time, which may be about 14 years since, when the patient, mentioned in Case 17, made first use of this saline Water, a stranger daily appeared for a considerable time, at this medical spring; he drank very regularly of this water, was polite in his conversation, of a good presence, and in no shape appeared of a mean condition. But he was an entire stranger to all that saw him in this town. A short time before he went from hence, he declared to several creditable gentlemen, the benefit he had received from the great efficacy of the *Hanlys-Spa* Saline Purgings-water; by assuring them, that he was cured of a most inveterate Leprosy, by drinking, and washing his body twice a day with this Water.

II. CASES of CURES, of which the Truth is confirmed to me, by the Persons, on whom they were performed.

19. MR. Thomas Williams, who keeps at present the sign of the Bunch of Grapes, on *Bickton Common*, was bound apprentice to a blacksmith, at about 15 years of age. In this employ, by working harder than his strength could bear, he contracted a violent inflammation in his blood; which, by neglect, became so acrimonious, that he broke out in large ulcers all over his body; his arms and legs in particular were worse than any other parts, to that degree, that the bones exfoliated, and splinters were frequently discharged. By this time, he was at the age of 16, and had been for a considerable time in the Infirmary of this town, where he was attended with very good care, and nothing of what comes within the circle of an hospital, was neglected for his recovery. But all without any salutary effects; on the contrary, the sharp, corroding matter that floated about him, increased to that degree, that it affected the bone of one of his fingers;

gers; in so much, that an amputation became necessary, and was wasted so much, that he could not move out, or in the bed, without help. All this was attended with a dry, husky, consumptive cough, and a slow, hectic fever. In this condition he left the Infirmary, as an incurable patient; and by the helps of his friends, he was removed to the *Hanlys-Spa-Water*; where he drank every day such a quantity of the saline, purging Water, that it purged him much, being at this time, not under the direction of any Gentlemen of the Faculty, the dose of the Water was ascertained by the operation; yet he gained, with these continual evacuations, strength daily; and in three months time was perfectly recovered from all his complaints, and ever since has continued well, which is now 16 years, and upward; about 12 years of which time he lived as a servant, in a noble family in *London*.

It deserves to be noticed here, that when he drank this Water, he was advised to swallow every morning, before drinking, young frogs alive; and tho' he did drink

large quantities, yet the frogs digested well with the water; a circumstance I never heard of before, but very much deserves our particular consideration; because it is a most excellent hint, and points out a method to make almost any Mineral-water much more serviceable, than they are at present, to hectic constitutions.

20. AN able, and substantial tradesman, at this time, about 47 years of age, of a good make, and a healthy constitution, at the age of 33, contracted in his business a most severe cold, which determined in a general waste, attended with a most violent cough, no proper expectoration, but discharged a thin, acrimonious matter. This disorder continued for about three years, by which time he was reduced, to an extreme weakness, to that degree, that he had but little encouragement, from the Faculty, for a recovery; and as he found this to be the case, he had no great inclination of meddling with the *Materia Medica*, and therefore, took but a small quantity of Shop-Medicines; but went as early as *February* to drink the Saline, Purging-Waters, at the

the *Hanlys-Spa*. In so doing, he was neither advised, directed, or guided by any Gentleman of the Faculty; and I must confess, that had he been under my care, I should not at that time of the year have recommended him to drink this Water at the Fountain-head; but, however, he did so in a plentiful manner. The first day it worked him by vomit, stool, and urine; these joint evacuations continued for a few days, then it operated only in a purgative manner. He continued drinking, and in about six weeks time, an eruption broke out all over his body; then he caused some of this Water to be made milk-warm; wherewith he washed himself all over twice a day, not omitting to drink his usual dose constantly; in this manner, he continued, till the eruption was gone, at which time, his former strength and health were compleatly restored.

He has never since been troubled with his former disorder, nor has the least appearance of any eruption. He commonly drinks this Water once a year by way of preservative, and begins as early as *February*.

ary. From hence we learn, that this Water is efficacious in all seasons, when necessity requires it.

21. ABOUT eight years since, another of the same occupation, and much of the same constitution and temperature, as the foregoing, in Case 20, contracted in the same manner, a scorbutic inflammation in his blood, to a very high degree, which produced no eruption, but the skin all over his body appeared very hot and inflamed, attended with a most violent itching, so that he was obliged to rub himself constantly. In the evenings he was always worse. In any warm place, or in bed, he was still more afflicted. This disorder continued upon him for more than 12 months. In all this time his stomach was not in any degree disordered; he had the advice of several Gentlemen of the Faculty, and the *Materia Medica* was not spared. But, as he could find no relief by these means; his complaint became very troublesome, and tho' in the beginning of *January*, yet nevertheless he had recourse to the *Harly-Spa*; and by drinking for a short time, the saline, Purg-

Purging-water of that place, at the Fountain-head, he was perfectly cured; and has remained well ever since. N. B. This is a second instance, which proves this Water beneficial in all seasons of the year.

III. *Some Account of CURES, performed under my own Inspection.*

22. A MILLER's wife, from a neighbouring, Welch county, came to me early in the Spring, last year, for advice. She was about 52 years of age, of a good, strong constitution; her diet consisted chiefly of milk, oat-bread, and such other common provisions, as the country produced. She had lost the Catamena so early, as at the age of 47, at which time she had neglected, and not taken that care of herself, as she ought to have done. She was naturally of a costive habit of body; and the consequence of her neglect was violent headaches, inflammations in the eyes, swellings in the stomach, and a violent eruption all over her. I recommended to her the drinking every morning, three half pints, of our saline, and one half pint, of the Chalybeate-water; and as she lodged near the
Spa,

Spa, to take at night, before she went to bed, one half pint of the Saline-water, at the Spring-head. But, as the three half pints she took in the morning did not sufficiently operate, I advised her to drink four half pints, of the Saline-water, and this quantity had the desired effect. By which means she recovered very much in a fortnight's time; but could not stay any longer, or else a compleat cure might have been expected.

23. A STRONG, hail young man, of a robust constitution, servant to a farmer, about 22 years of age, had a few years since the small pox, in a most severe manner: after which, the usual and necessary evacuations were neglected; the consequence was very bad ulcerated legs; for which he did last summer drink the saline Waters at the *Hanlys-Spa*. I recommended him to bathe his feet some time in the same water, making it warm for this purpose. He did both, as often as his occupation would permit it; and tho' he used this Water, in an irregular manner, yet he has obtained such great benefit, that a complete cure cannot be

be doubted, if he the ensuing spring drinks this water with any degree of regularity.

24. ONE Mr. T. I. A young man of about 26 years of age, was afflicted in his right arm, from the wrist to the elbow, with a white swelling, attended with most exquisite pains, and a total loss of the use of his hand. As his business consisted in writing, he was not able to follow it; he used various means for his recovery, and remedies, both in- and external, were not spared. The affected parts were blistered, cupped, fomented, poulticed, &c. in short, there was nothing omitted, that could be thought of, for his relief, all to no purpose. But, on the contrary, the disorder daily increased. In this situation he came to me, in the beginning of last summer, for advice. I prescribed, at first, several sorts of deobstruents, purifiers of the blood, and embrocations. All this did not relieve, nor prove of the least service to him. He continued in the same manner, as he was, when he came first to me; however, the disorder did not increase any farther, yet, nevertheless, his condition was truly miserable,

ble, because his pain was such, that he could have no rest, either night or day. Whereupon I prescribed him a Pill of a mineral preparation, with camphire, and a small quantity of Crude Opium, to be taken over night, and to be purged off in the morning, with our Saline, Mineral-water, at the *Hanly-Spa*; by which means he was compleatly cured, in about six weeks time.

25. MR. I. M. M. of a sanguine, choleric temperature, robust, and of a good make of body, but all his life-time inclined to lax, or weak fibres; in the first 36 years of his age was rather thin, and when he fed, or the flesh on his body did in the least increase, he was attacked with a nervous fever, which seldom lasted longer than 10 or 12 days. The certain consequence of them was, that these fevers at all times reduced his flesh, and made him thin again. These fevers were very frequent, and he never was 18 months without one of them.

He was always very active, and used to much exercise in the open air; but about

30 years ago, his usual exercise being changed from the open air, to his business within doors, such as brewing, &c. he had not so often these nervous fevers, and, in about ten years time, they left him intirely. But a more complete nervous disorder succeeded them; this disorder, from the description he gives of it to me, I apprehend was a bastard Palsy, of the convulsive kind, intermixed with a partial Chora. St. Vitus. For these complicated disorders, he took various kinds of medicines, for about six months, with no manner of success; and by changing for about 14 or 15 days, his usual way of living, by eating and drinking more than his constitution could digest, he was confined to his bed, and attended by an eminent Physician, for at least 10 weeks. He recovered gradually, but the remains of this distemper remained upon him till within these two years, and frequently would make their appearance, with great lowness of spirits and irresistible muscular motions.

N. B. It is necessary to observe, that about 20 years since he increased in bulk, and became fat; and these nervous disorders were

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were very regular in their periods, both Spring and Autumn.

ABOUT two years and three months ago, he was seized with a cholic and purging, which determined in a relaxation of all the solids, in such a manner, that he was not able to use his limbs. In this situation he continued for a long time. Many and various were the means he used for his recovery, but all proved unsuccessful, till he made use of the *Hanlys-Spa* saline, Mineral-water; by which means he is recovered so much, that he can walk and ride.

C H A P. VII.

Directions for Using the Mineral-waters of the HANLYS-SPA.

IT has been remarked by several, that the directions in one of my former Works *, for using Mineral-water, are extremely minute, and that, tho' they are applied to one

* A Treatise on the Three Medicinal Mineral Waters at *Llandrinded*.

water only, yet it has been thought by some, that they might serve, as sufficient instructions, to the Valetudinarians, in all Mineral-waters, in general. It is also true, that I had a very good opinion of my own performance, and was so pleased therewith, as to consider it so perfect, that very little could be added, by way of improvement. But herein, as in all other things, we experience our own frailty, and that imperfect condition or heterogeneous ingredient, the primary cause of errors and mistakes, which is so minutely interwoven with the human frame. It is now 14 years since I published that Work, in which these Directions are contained; and as I, in all this time, have had a great variety of Mineral-Water-Practice, I have been experimentally convinced, that a great deal yet is wanting.

NEXT to this, I have perused the works of the most experienced Gentlemen in this branch of Medical Learning, of which the most learned Drs. *Seip* and *Springsfield*, are justly esteemed the superiors; and by means of their excellent Treatises, I am informed of many material things, I never thought of

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before,

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before, which I am not ashamed to confess; and also, that I have borrowed of them, to make these Directions come as near perfection as human Nature will permit.

SOME of them may at first sight be deemed trivial, but, here I can assure my readers, that none are advanced, without practical confirmations; and I am very sure that such as observe them, will easily perceive the benefit. And I am fully assured, that the same scrupulous caution and carefulness have been attended to, by the Gentlemen I collect from. I do not repeat here my former Directions, but I relate new ones, which may be considered, as a continuation of the first.

DIRECTIONS.

1. THE common custom that has so long prevailed, viz. to begin all sorts of Mineral-waters with previous Purging, is by experience superseded; because it has been found, that if saline, Purging-waters, in chronical diseases, have been used for eight, or more days, as an alterative, the Thermae, chaly-

chalybeate, and other waters, that are without purging qualities, have more effectually succeeded, than when the patient was prepared, by purging. And that, for plain obvious reasons, because an alterative use of these Waters will by degrees soften, and dissolve the slimy, morbid matter, in the most distant part of the body; which the water cannot reach, if at the beginning used in a purgative manner.

2. ALTHOUGH the Hanlys-Spa-Water, by an irregular use of immoderate drinking, and violent purging, has performed many amazing cures, yet, nevertheless, it is much more advisable, to all, without distinction, that come for relief, to these Waters, to use them at first for seven or eight days, as an alterative.

3. IT is universally agreed by the Faculty, and confirmed by experience, that purging remedies are required with the use of such Mineral-waters, as naturally have no cathartic quality; in these cases drugs are not the proper things, because, from their resinous nature, they cannot easily mix, and

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unite in the human body, with Mineral-waters, which causes them to stick, and adhere to the intestines; the consequences of which are obstructions, inflammations, cholics, with other disorders; and therefore by no means safe for this purpose. Experience, the guide and touch-stone of all things, has instructed us, that the saline, Mineral-waters are the most natural evacuators in these cases. Wherefore then, as the Purging-waters of the *Hanlys-Spa* will bear carriage, it is advisable for such as will make use of the *Bath-waters*, and cannot conveniently prepare themselves, at the *Hanlys-Spa*, to send for this Water to *Bath*, and use it with the *Bath-water*, which may be done with great conveniency, as it can be sent weekly, by water-carriage upon the river *Severn*.

4. THE *European Physicians*, that practised in the most early times at Mineral-water-fountains, have introduced too many, and too great quantities of artificial medicines into practice, to be used with the Mineral-waters: and as they in this respect have greatly over-shot the mark; so, on the

the other hand, several moderns have fallen into the other extreme, and have as unjustly exploded all kinds of remedies from a joint use of Mineral-waters, as the others crowded, and perplexed it. However, experience, in this, as well as in all other things, has set us right, and instructed what remedies are most beneficial with these Waters; and also the manner of preparing them properly, that they may mix and unite with them. There are several disorders, which require artificial medicines, with the use of these Waters; for instance, in asthmatic complaints, proper balsam, dissolved with honey, united with stomach-bitters, and joined with the use of Mineral-waters, have been of infinite service. N. B. All balsams dissolved with honey are very agreeable to, and mix with all kinds of Mineral-waters,

5. THE same practice is necessary in the remains of the Venereal Disease, Gonorrhœa-Simplex, Fluor Albus, and seminal Weakness; very good effects have been experienced in these disorders, when balsamics, and other proper drugs have been pre-

pared with honey, and joined with the use of Mineral-waters.

6. DIURETIC Tinctures, mixed with Mineral-waters, have been found of the utmost good consequences, in the beginning of Dropsies, and dropfical swellings. Digestives, and Mineral-waters, have cured Agues, where the Bark had failed; and Antispasmodic Medicines, when joined with Mineral-waters, have had in convulsive disorders the desired effect, altho' they had been used for a considerable time without any manner of success.

7. It is not a new observation, but a remark of a long standing, that artificial medicines, when in all respects ineffectual by themselves, have operated most powerfully, when joined with Mineral-waters. We have no cause to wonder at these effects, when we consider, that an universal, and general cleansing is promoted, thro' all the body by these Waters; and by removing the smallest obstructions, in the most minute circulatory vessels, these remedies are enabled to act for salutary purposes.

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The only thing that we have to do, is, to cause them to be prepared in such a manner, that they may properly mix and unite with the Mineral-waters, and not separate from it in the bowels of the Patient.

8. BITTERS, and stomach Drops, are highly necessary to be taken by all Water-drinkers, a short time before dinner, not with an intent to create an appetite, because that is sufficiently promoted by the Waters, but to move the digestive juices to the stomach; which may sometimes have been washed away, or rendered inactive, and also to renew that natural warmth of the parts, near and about the stomach, which we must expect to be somewhat chilled by the use of the water. Dr. Rodder, in his Treatise on the Mineral-water of *Driburg*, has given several compositions for Stomach-drops, to be taken by Mineral-water-drinkers, adapted to different complaints; which I shall subjoin to the end of this Chapter.

9. To sweat, after the water has operated,

is highly salutary; but, when the patient drinks the water he must be cool, and no manner of sweat upon him; and if a sweat should ensue, at the time of drinking, proper means must be made use of to prevent it; and if that cannot be brought about, he must entirely leave off drinking Mineral-waters. Because, from this sweat it is plain, that no evacuation from the water is to be expected by stool and urine; and therefore the consequences would be dangerous, if the drinking was continued.

10. SUCH as are used to night-sweats, must not immediately, on rising from bed, expose themselves to the open air; but walk, and move in their bed-chamber, till all the sweat is gone off, before they proceed to the Mineral-water-fountains for drinking.

11. To sleep after dinner, is in general very prejudicial to all, but in particular, more so, to Mineral-water-drinkers, because they ought to use exercise, in the afternoon, and to be very quiet, or rather motionless between breakfast and dinner: But if they can accustom themselves to sleep

sleep a few hours, at this interval of time, they will find very great benefit in so doing. And if they are restless at night, a mild Paregorick draught must be taken, when going to bed.

12. WITH the use of all kinds of Mineral-waters, be it at the Fountain-head, or such as will bear carriage to the patient's residence, exercise is required, and should on no account whatever be drank within doors, in a sedentary manner.

13. MINERAL-WATER-FOUNTAINS are situated between Mountains and Eminences, and therefore these places are liable to frequent and sudden changes of the weather; wherefore then, the comers to these places ought at all times to be provided with a double set of cloaths, and to vary them according to the atmosphere; because, to be cold or chilly, for want of cloaths, or to be hot and sweaty, by too many, are prejudicial extremes, which retard the good effects, that are expected from Medicinal, Mineral-waters.

14. SUCH

14. SUCH as are of a very weak or tender constitution, may at first drink the Mineral-waters; but, in this case, the water must with the utmost expedition be conveyed from the Fountain-head to the Patient's bed-chamber; and when strength and recovery increases, then it is advisable to drink them at the Spring. In these circumstances, at the beginning, additional warm cloathings are necessary; but as soon as they can walk, and use other proper exercise, then they ought to be dressed accordingly, to such a degree, that no inconvenience may ensue on either side.

15. RIDING on horseback, as I have observed elsewhere, is the very best exercise that can be contrived, or thought of, for Valetudinarians, that have recourse to these natural remedies; for which reason, it is advisable, to use it as soon as possible; beginning either with walking, or in a wheel-carriage, according as the constitution will bear it.

16. IT is a received opinion, and I have formerly recommended it myself, to drink
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Mineral-water at meals, instead of small beer; but am now from practice convinced, that this is a very wrong proceeding. Because Mineral-waters have elastic spirits, with which they not only disturb the food they are mixed with, but also by expanding the digestive powers, cause belchings; and therefore it is better to take the afternoon and evening draughts some hours after dinner and supper, when the concoction in the stomach is over.

17. AT the time when the Catamenia, or any other kind of Hæmorrhage, in either sex appears, Mineral-water must be omitted, but, may be re-assumed, as soon as they are over. Mineral-waters will promote these discharges, and therefore, such as have them too much, or immoderately, should never meddle with these natural medicines; because, that long prevailing notion, viz. that Mineral-waters would lessen immoderate Fluxes of this kind, has been found to be a very great mistake.

18. BREEDING women should by no means make use of any Mineral-water, during their pregnancy.

pregnancy. Dr. Seip says, that he knows a few instances, where Ladies of very tender constitutions, in the two first months, have used the *Pyrmont-water*, without a miscarriage, and at a proper time, brought healthy children into the world. But then, there were so many disagreeable circumstances attended it, that there is no manner of encouragement left, to recommend any kind of Mineral-water to pregnant Ladies.

19. SUCH women as give suck to children, may freely make use of most kinds of Mineral-waters. But the children ought to be at least half a year old, and also used to eating, as well as sucking. Dr. Seip has observed, which I also know from my own experience, that children have been cured of several diseases, by the Wet-nurse's drinking Mineral-water.

20. WHEN a Wet-nurse uses these natural medicines, she must suckle the child in the morning plentifully, before she begins to drink, and not to put it to the breast again, till the operation of the water is over; and if the water she makes use of, has not
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a natural purging quality, the must take such things, as will cause every morning an evacuation by stool; and if that is omitted, the child will purge most violently. All Mineral-waters cause an increase of good strengthening milk, and therefore they are recommended to all Wet-nurses in general.

21. MANY and various are the causes, from whence Epilepsies proceed, insomuch, that they cannot be all recited here. If they proceed from humours, thrown upon the lungs, from a bad-cured Itch, or Fever, or an irregularly treated Hæmorrhoids, &c. in all these Cases, our Saline, Mineral, and Chalybeate-waters joined together, are the best remedies against this melancholy disease.

22. IN such persons as are called Noc-tambuli, that is, Sleep-walkers, or troubled with the Night-mare; which disorders proceed from a thick, fizy blood, indigested humours, and obstructions in the primary passages; our *Hanlys-Spa* Mineral-waters are in a manner specific remedies. In these cases it is proper to take in the morning, at
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the Fountain-head, about four half pints of the Chalybeate-water, and at night, going to bed, about three half pints of the saline, Purging-water; provided the constitution be strong enough, without its operating in the night: if that should be the effect, less must be given.

23. FROM what has been proved, by the cases in the 17th Chapter, it is manifest, that the Hanlys-Spa-Waters may be used at any time of the year; nevertheless, they are in much greater perfection, and more agreeable to the human constitution, from Spring to Autumn.

24. IT is a very rare case, that Mineral-water-drinkers lose their appetite; yet it will happen to some few, which, whenever it happens, is always owing to some particular accidental cause. And whenever that is the event, the water must be left off, and the cause, from which the complaint proceeds, removed in a proper manner.

25. COSTIVENESS very seldom happens to the Saline, Mineral-water-drinkers; but
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yet it is so, in some few cases where the water will vomit, and operate neither by stool, or urine. To rectify this inconvenience, the saline Purgine-water made warm, Tinctura Thebaic being mixed with it, and in a plentiful manner, used as a glister, is the safest, and surest remedy.

26. THERE has at all times been a general prohibition of eating fruit, to the Mineral-water-drinkers; but this, like many other hypotheses, has been insisted on in former times, without any rational foundation. Reasonable considerations have in the Mineral-water doctrine been entirely out of the question; because, if the effects of these waters had been properly attended to, it would have been known, that they will absorb all kinds of sourness they meet with in the stomach. There may be too much acid, and too frequently there is more sharpness in this alimentary receptacle, than it can digest; yet, it cannot entirely do without it; and as Mineral-water-drinkers too often want this ingredient, how can it then be better replaced, but by that pleasant and agreeable acid, we meet with in strawberries,

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ries, and all other ripe fruits ? Dr. *Springsfield* very justly observes, that a salad, made with much lemon-juice, and very little oil, sets, without trouble, an alkalized stomach right. But here, as in all other things, we are obliged to recommend moderation ; because, ill consequences may ensue, as well from taking too much fruit, as from any other thing.

27. To smook tobacco in the morning, between the potations of the Mineral-water, has been very fashionable ; and here I must confess, before I considered it properly, have done it myself, and recommended it to others. But, as the intent and purpose of all Mineral-waters are to work downwards, as soon as possible, tobacco in any shape, either in smoking, or taken as snuff, cannot be proper for Mineral-water-drinkers ; because the effects are opposite to each other.

28. For a phlegmatic stomach, inclining to vomit, Dr. *Rodder* recommends the following mixture, at the time, when such Patients drink the Mineral-waters.

R *Essen.*

R. Effen. Galang ʒss. Efs. Redoar Efs. Card. Ben. Efs. Pimpin. alb. Efs. Gent. rubr. Tinct. Antimon. acr. aa ʒij ol. distil. Macis. gut xij M. Of which, 70 or 80 drops are to be taken one hour before dinner, in wine.

30. To such as are often afflicted with cholic pains, and troubled with flatulences, 70 or 80 drops of the following mixture, are recommended to be taken before dinner, in wine, or broth.

R. Effen. Cormin. Wedel Efs. Carmin. Albert. Efs. Cort. Aurant. recentium. Liq. Anod. min. Hofm. aa ʒss. Tinct. Antimon. tartarif. ʒij ol. distill. Carv. ol. distill. Cum. aa gt. viij. fent. m.

31. To asthmatical Mineral-water-drinkers, 60 or 70 drops of the next mixture is advised to be taken in wine, or broth, a short time before dinner.

R. Effen. Enul. Efs. L. Sassafr. Efs. Succ. Efs. Gum Ammon. Efs. Myrrh Efs. Mastich, Efs. Cort. Chaccaril. Liq. Anod. min. aa ʒij ol. distill. foen. gut. xij M.

32. In obstructions of the Catemenia, or any hæmorrhoids, 60 or 70 drops of the

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succeeding mixture, to be taken in any pleasing liquid, before dinner.

℞. *Ess. Succin.* ʒvj *Ess. Myrrh* *Ess. Sabin.*
Ess. Aristol. rot. aa ʒss. *Tinct. Mart.*
Aperitivo. Elixir propr. sine uvula aa ʒij
fiat. M.

33. To hypochondriacs, and such as are troubled with obstructions in the liver, jaundices, &c. 80 drops of the next mixture are recommended to be taken before dinner.

℞. *Tinct. Solar. Mart. Ludow.* ʒss. *Ess.*
Aron. Ess. Pimp. Ess. Vincetox. Ess.
Galang. aa ʒij ol. *Cinam. gt.* viij. *F.*
M.

34. In a bad state of blood, where the legs swell, and a dropsy appears to be near, or where there is a lethargic disposition, the underneath mixture is to be taken, 70 or 80 drops before each meal.

℞. *Essen. Vincetox* *Ess. Parreir. brav. Ess.*
Alkekeng. Ess. Millep. Ess. Aron. Ess.
Gent. r. Essen. Absynth. Tinct. Antimon.
acr. aa ʒij ol. *Junip. gt.* xv. *M.*

35. For such as are troubled with a vertigo, or a swimming in the head, 60 or 70 drops of the following mixture is recommended to be taken before dinner.

℞ *Essen.*

*R. Effen. Cubebar. ʒss. Efs. Card. ben. Efs.
Pimp. a. Effent. Ambr. Liq. Anod. Min.
Hofm. aa ʒij ol. Caryoph. arom. gut.
viij M.*

36. IN the scurvy, and all cutaneous eruptions, 60 or 70 drops of the next mixture are advised to be taken before each meal.

R. Effen. Cochlear. Efs. Famar. Efs. Trifol. aquat. Efs. Emul. Efs. Succin. Efs. L. Sassafr. Tinct. Antimon. acr. aa ʒij M.

37. THOSE that are afflicted with the Fluor Albus, Gonorrhœa Simplex, or any other remains of the Venereal Disease, are recommended to take 60 or 70 drops of the following mixture, before each meal.

R. Effen. Lign. Sancti ʒss. Efs. Sassafr. Efs. Emul. Efs. Pimp. a. Efs. Succin. Tinct. Antimon. acr. Balsam. de Copaib. aa ʒij. M.

38. ESSENCES have, in a manner, been totally exploded, and banished out of the Medical Practice in *England*, and the reason for so doing, is most certainly very just; because they were by the makers and venders cried up, and virtues attributed to them, which were in their nature impossible. It will therefore be wondered at, that I re-

commend here a long register of them, for the use of the Mineral-water-drinkers. To which I beg leave to answer, 1. On a due consideration, it will appear, that Essences are the best adapted preparation amongst the *Materia Medica*, that will mix and agree with Mineral-waters. 2. This agreement of the Essences, with these natural medicines, is confirmed by experimental facts. 3. From Essences by themselves, I never found any good effects; but when joined with Mineral-waters, I have observed very great benefits from their aid and assistance; and for these reasons I recommend them, and no farther; I conclude this Subject, by observing, that Essences ought to be carefully prepared, and given in larger quantities, than Dr. Rodder has prescribed them.

F I N I S.

E R R A T A.

Page 77, Line 20, for Morbific read *Morbific*.—P. 81, l. 1, for Mineral Water r. *Diseases*.—P. 82, l. 1, for the Virtues r. *the Transmutation*.—P. 83, l. 1, for Mineral Water r. *Diseases*.—P. 84, l. 1, for the Virtues r. *the Transmutation*.—P. 85, l. 1, for Mineral Water r. *Diseases*.—P. 86, l. 1, for the Virtues r. *the Transmutation*.—P. 87, l. 1, for Mineral Water r. *Diseases*.—P. 114, l. 25, for Therme r. *Therme*.—P. 122, l. 4, after Mineral Water, add *within Doors*.—P. 126, l. 10, for 17th r. 6th.

